UNIVERSITY OF ALBERTA

GREY ANATOMY:
RECONSIDERING THE LEGACY OF NAZI MEDICINE THROUGH EDUARD PERNKOPF'S *TOPOGRAPHISCHE ANATOMIE DES MENSCHEN*

BY

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In memory of the unknown victims of the Nazi regime depicted in the *Topographische Anatomie des Menschen.*

GREY ANATOMY:
Reconsidering the Legacy of Nazi Medicine Through Eduard Pernkopf's *Topographische Anatomie des Menschen*

In 1989, the third English edition of the Pernkopf anatomy text was published. It received positive reviews in several medical journals. In under a decade, however, Pernkopf's political affiliations, the Nazi symbols contained within the atlas, and the dubious origins of the bodies used as models in the text came to light.

The resulting debate concerned itself primarily with the relationship of the text to the holocaust, many arguing that the text should be expunged from medical literature. This thesis, however, examines the factors that led to the delay in the reevaluation of the atlas within the neglected contexts of the history of anatomy and medical practice. It argues that the delay in the reevaluation of the Pernkopf text can not be attributed to ignorance. Rather the long postponement in the reevaluation of the text was the result of a fundamental ideological shift in the public perception of Nazi medicine.

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Eduard Pernkopf

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LIST NOMENCLATURE AND ABBREVIATIONS

AMA	American Medical Association
Anschluss	The German term for the joining of Austria and Germany on March 12, 1938
Bundeskanzler	Chancellor
Burschenschaften	Fraternities
JAMA	*The Journal of the American Medical Association*
Hackenkreuz	Swastika
Komissarischer Dekan	Official Dean
Landesgericht	Assize Court
SA	*Sturmabteilung* (Brown Shirts)
SS	*Schutzstaffel*
Westdeutschen Ärztekammern	West German Medical Chambers
Wien	Vienna
WKW	*Wiener Klinische Wochenschrift (Viennese Medical Weekly)*
Yad Vashem	The Holocaust Martyrs' and Heroes' Remembrance Authority (an Israel based human rights organization)

INTRODUCING PERNKOPF

In 1989, the third English edition of the renowned *Pernkopf Anatomy: Atlas of Topographic and Applied Human Anatomy* [4] was published by Urban & Schwarzenberg of Baltimore. The text received positive reviews in several well-respected medical journals including the *New England Journal of Medicine*[5] and the *Journal of the American Medical Association* (*JAMA*).[6] In under a decade, however, the Nazi symbols contained in the text, the political affiliations of its author, Eduard Pernkopf, and the dubious origins of the bodies used to illustrate the medical atlas came under increased public scrutiny. In response to the questions raised as a result of the controversy a coalition of Canadian and American physicians, in conjunction with the Israeli Yad Vashem Memorial, demanded a thorough investigation into the text and its author by the University of Vienna. As a result the book came to be criticized in the very journals that had once lauded it and became the epicenter of an ongoing international medical-ethical debate.

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[4] Eduard Pernkopf, *Atlas of Topographical and Applied Human Anatomy,* ed. Werner Platzer. 3rd Revised Edition (Baltimore: Urban & Schwarzenberg, 1989).

[5] Richard S. Snell, “Pernkopf Anatomy: Atlas of Topographic and Applied Human Anatomy,” review of *Atlas of Topographical and Applied Human Anatomy, Volume I: Head and Neck.* Ed. Werner Platzer. 3rd Revised Edition. *New England Journal of Medicine* 323, no. 3 (1990): 205.

[6] Malcolm H. Hast, “Anatomy Head and Neck,” *JAMA* 263, no. 15 (1990): 2115-2116.

The *Topographische Anatomie des Menschen: Lehrbuch und Atlas der regionär-stratigraphischen Präparation* was the life's work of Austrian anatomist Eduard Pernkopf. The anatomical atlas, comprised of more than 1000 watercolour paintings, required more than 22 years to complete. Covering the entirety of the human form over seven volumes, the comprehensive work received both domestic and international acclaim for its accuracy, high quality illustrations, and monumental scale. As a result of its popularity the text was reprinted several times and, by the mid-1950s, was translated into multiple languages including English, Japanese, Italian, Greek, and Spanish.

The atlas continued to be utilized by the medical community for more than 50 years, but in the mid-1990's questions began to surface around both Eduard Pernkopf and his text.[7] The major impetus for these questions was twofold. First, in the mid-1990's Dr. Howard Israel of Columbia University was reviewing a copy of the text prior to a surgery when a senior colleague brought the possible Nazi origins of the atlas to his attention.[8] Israel subsequently discovered that early editions of the medical atlas contained swastikas and SS symbols in the artists' signatures that were airbrushed out of later editions. He also developed suspicions about the origins of the bodies Pernkopf used to illustrate his text. Through speaking with colleagues and examining existing medical literature he found that "others had been aware of Pernkopf's background but had felt that the book's merits made its continued use acceptable."[9] Israel, angered by his findings, then began to notify period scholars and eventually made the acquaintance of William Seidelman, a medical history expert and then Professor of Family and Community Medicine at the University of Toronto.[10] Dr. Israel and Dr. Seidelman wrote articles and letters to the editor to several medical journals concerning the atlas and contacted several Austrian and German universities requesting an investigation into the text.[11]

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[7] At least two articles were published on the Pernkopf atlas prior to the debates in the 1990s (Gerald Weissmann, "Springtime for Pernkopf," *Hospital Practice,* 20 (1985): 142-68 and David J. Williams, "The History of Eduard Pernkopf's *Topographische Anatomie des Menschen*." *Journal of Biocommunication* 15, no. 2 (1998): 2-12). Although these articles contained significant information they failed to capture public attention (the reasons for this will be discussed in Chapter II).

[8] Nicolas Wade, "Doctors Question Use of Nazi's Medical Atlas," *New York Times*, 26 November 1996, C1.

Concurrently, an article written by former University of Vienna faculty member Edzard Ernst focused additional attention on the topic. Appearing in the *Annals of Internal Medicine*, Ernst's article "A Leading Medical School Seriously Damaged: Vienna 1938"[12] dealt with the many ethical issues pertaining to the University of Vienna and its then little publicized Nazi past. His article specifically mentioned Eduard Pernkopf's role in the dismissal of 153 members of the Medical Faculty of the University of Vienna and criticized the lack of attention given to the subject on the part of the university.[13]

The actions of Israel, Seidelman, and Ernst prompted hundreds of articles on Eduard Pernkopf and his atlas. The resulting debate played out in the most prestigious English-language medical journals. In contrast to Dr. Israel's early experience, few were content to ignore the issue and many were quick to condemn both the Atlas and its creator. Ernst admitted that, given the highly charged nature of the subject, he was somewhat surprised that he "did not receive one critical response"[14] to the publication of his article.

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[9] Wade, "Doctors Question Use of Nazi's Medical Atlas," C1.

[10] Israel quoted in "Remains of the Holocaust," 65.

[11] Howard A. Israel, "Origins of the Pernkopf Anatomy Atlas-*Reply,*" *Journal of the American Medical Association* 277, no. 14 (1997): 1123; William E. Seidelman and Howard A. Israel, "Nuremberg Lamentation: For the Forgotten Victims of Medical Science," *British Medical Journal* 313 (1996):1463-1467.

[12] Ernst, "A leading Medical School Seriously Damaged: Vienna 1938," 789-792.

[13] Ernst, "A leading Medical School Seriously Damaged: Vienna 1938," 790.

As a result of the debates, at the request of physicians the text has since been removed from the shelves of several North American libraries.[15] For example, after reading Ernst's article Richard S. Panush and Robert M. Briggs were "surprised" to find a copy of Pernkopf's anatomy atlas in their medical center and "corroborate most of Dr. Ernst's recollections of Pernkopf."[16] Consequently, they requested the text be removed from New Jersey's St. Barnabas Medical Center's library's circulating holdings. They asserted that the very suggestion that Pernkopf may have "used the corpses of executed persons for teaching purposes" was reason enough to warrant its censure.

> Some have debated the ethics of using information derived from Nazi physicians and Nazi "experiments."[17] Most agree that revulsion at the perversions of Nazism overrides all other issues and that such material should be expunged from the literature of our profession, preserved only lest we forget.
>
> We consider the character and activities of Pernkopf sufficiently disturbing to warrant removal of his atlas from circulation. We have asked our

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[14] Edzard Ernst, "In Response," *Annals of Internal Medicine* 123, no 12 (1995): 964.

[15] Richard S. Panush, "Nazi Origins of an Anatomy Text: the Pernkopf Text [letter]," *JAMA* 276, no.20 (1996): 1633-1634, and Scott A. Norton, "On First Looking into Pernkopf's Atlas (Part 2)." *Archives of Dermatology* 137 (2001): 867-868.

[16] Richard S. Panush, and Robert M. Briggs, "The Exodus of a Medical School - Letter to the Editor," *Annals of Internal Medicine* 123, no. 12 (1995): 963.

[17] The authors specifically refer to the hypothermia experiments conducted at Dachau; in particular they cite M. Angell's "The Nazi Hypothermia Experiments and Unethical Research Today," *New England Journal of Medicine* 322 (1990): 1462-1464 in a footnote.

> medical center to do so and have also discussed this with the past and present distributors of the atlas. Institutions, as do individuals, have values. Ours are reflected in this small but significant act. [18]

Subsequent to these reflections, Panush became very involved in the debates surrounding the *Pernkopf Atlas*. Following the removal of the Pernkopf anatomy text from the St. Barnabas Medical Center Panush focused his attention on the text's publisher, Edward B. Hutton jr., requesting the cessation of the text's publication in future. Hutton refused this request stating "[w]hile we renounce his abhorrent views we separate Pernkopf, the man, from the work because of the lack of evidence as to the true origin of the cadavers used in the atlas."[19]

In response, Panush wrote "the Nazis, Nazi physicians, and their era represented a horrible, unprecedented evil, repugnant to all humanity and medical tradition," [20] and that "it is our moral obligation to society, to victims and survivors of Nazism, and to posterity is to repudiate Pernkopf and all he represented.[21] Two years later Panush continued to advocate the removal of the text stating that "we cannot forget that Pernkopf violated the precepts of the Hippocratic Oath," [22] and "we cannot forget that there is really no acceptable rationalization to preserve Pernkopf's legacy within our medical culture except as a symbol of what our societal values obligate us to repudiate.[23]

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[18] Panush and Briggs, "The Exodus of a Medical School," 963.

[19] Edward B. Hutton Jr. "In Reply-Pernkopf Anatomy [letter]," *Journal of the American Medical Association* 276, no. 20 (1996): 1633-1634.

[20] Panush, "Nazi Origins of an Anatomy Text," 1633-1634.

[21] Panush, "Nazi Origins of an Anatomy Text," 1633-1634.

[22] Richard S. Panush, "In Reply-Origins of the Pernkopf Atlas," *JAMA* 277, no. 14 (1997): 1123.

The shock and anger expressed by Panush and Briggs was reflective of the opinions of the majority of commentators on the text. Although the rhetoric of the aforementioned statements is compelling, the questions surrounding the Pernkopf text and its creator are not nearly as straightforward or easily resolved as the author would suggest. Panush and Briggs' comments illustrate a persistent problem with the Pernkopf debates, namely that traditional arguments concerning Nazi doctors and scientists are difficult to apply to either Eduard Pernkopf or his text. While one might be inclined to think of Nazi doctors as uniformly sadistic and inept, this type of stereotype is confounded by the case of Pernkopf. Eduard Pernkopf did not directly harm anyone, his text was scientifically accurate, and although we now criticize Pernkopf for his political beliefs his anatomical atlas continued to be used by the medical community in spite of them.

Panush claims that "Pernkopf violated the precepts of the Hippocratic Oath."[24] Eduard Pernkopf was indeed a Nazi who, like many of his contemporaries, believed in eugenics,[25] but, unlike other more infamous Nazi physicians, Eduard Pernkopf was an anatomist. Pernkopf held a medical license, and had practiced medicine for a brief period during the First World War, but his primary functions at the University of Vienna included administrative duties and teaching, in addition to the detailed writing and preparation of anatomical specimens for his text. In these capacities there is no evidence to suggest that Eduard Pernkopf ever experimented with, tortured, or killed anyone, and it is unclear which of the precepts of the Hippocratic Oath he violated.[26]

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[23] Panush, "In Reply-Origins of the Pernkopf Atlas," 1123.

[24] Panush, "In Reply-Origins of the Pernkopf Atlas," 1123.

[25] Weissmann, "Springtime for Pernkopf," 142-68. See Martin S. Pernik's *The Black Stork: Eugenics and the Death of "Defective" Babies in American Medicine and Motion Pictures Since 1915* (New York: Oxford University Press, 1996) for an interesting discussion on eugenics in the American context.

In addition, the authors' arguments are further problematized by their decision to equate the Pernkopf anatomy text to the Dachau hypothermia experiments.[27] While linkages between the two exist, they are not analogous. The experiments to which Briggs and Panush refer did not follow the scientific method, and lacked control subjects. As such, the information derived from the experiments is considered unusable by today's standards, even without taking ethical concerns into consideration.[28] In contrast to the majority of Nazi medical experiments which can be criticized for both their scientific failings and utter disregard of the Hippocratic Oath, the accuracy or "scientific validity" of the anatomical illustrations in the Pernkopf anatomy text have never been in dispute. As an anatomy text it is one of the best. The Pernkopf text is not only usable, it is and was used, both as an inspiration for later anatomy texts and by generations of physician and surgeons.[29]

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[26] "The Oath of Hippocrates," in *Medicine and Ethics and the Third Reich: Historical and Contemporary Issues*, ed. John J. Michalczyk (Kansas City: Sheed and Ward, 1994), 219. It should be noted here that, contrary to popular perceptions, there is not one singular version of the Hippocratic Oath. For an interesting historical exploration of the Hippocratic Oaths see June Goodfield's "Reflections on the Hippocratic Oaths," *The Hastings Center Studies* 1, no 2 (1973):79-92.

[27] Panush and Briggs, "The Exodus of a Medical School," 963.

[28] For a revealing multi-national discussion on human experimentation in the first half of the 20th century see Gerhard Baader; Susan E. Lederer; Morris Low; and Alexander V. Schwerin, "Pathways to Human Experimentation, 1933-1945: Germany, Japan, and the United States," *Osiris* 20 (2005): 205-231.

As Dr. Garett Riggs points out "after many years of hypothetical discussion of how the biomedical community 'might' or 'should' react to usable Nazi data, the Pernkopf atlas turns out to be the archetype of highly reliable data 'tainted' by its association with Nazism."[30] What Riggs does not discuss, however, is that the Pernkopf anatomy text is not just an example of "usable Nazi data," it is an example of Nazi data that has and continues to be used by doctors and surgeons. While it may be easy to dismiss and "expunge" some unusable scientific information, such as the Dachau hypothermia experiments, from the current medical cannon, the process of "expunging" the Pernkopf anatomy text and "repudiating" Eduard Pernkopf is problematic. Even if the Pernkopf text is removed from medical libraries, it is impossible to fully "expunge" it from either the individual minds of those who learned from it, or the medical tradition on the whole.

Removing the text and "expunging" it from the literature in some ways mirrors the Roman concept of *Damnatio Memoriae* (literally the Damnation or condemnation of memory).[31] For Pernkopf, whose deepest desire was to create the definitive anatomy atlas of his time, the removal of his anatomy text from circulation is tantamount to a *Damnatio Memoriae*, or in the words of Panush, an effective "repudiation." What Panush and others fail to recognize, however, is that it is impossible to expunge Pernkopf without erasing the memory of those depicted in his text. In his insistence upon absolute repudiation, therefore, Panush actually serves to undermine his stated objective.

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[29] Huth, "Review of *The Atlas of Topographical and Applied Human Anatomy,* by Eduard Pernkopf," *Annals of Internal Medicine* 61, no.3 (1964):" 605-606.

[30] Garett Riggs, "What Should We Do about Eduard Pernkopf's Atlas?" *Academic Medicine* 73, no. 4 (1998): 382.

[31] Used by the Roman Senate as a form punishment in order to dishonor unpopular, or particularly brutal emperors, the practice effectively erased any memory of the individual through the removal or replacement of their names on the public buildings and monuments they built to ensure their historical legacy This practice discredits the

In order to adequately understand the problems with the Pernkopf anatomy text, and with Nazi doctors in general, it is not enough to simply say that "the perversions of Nazism overrides [sic] all other issues and that such material should be expunged from the literature,"[32] and that "it is our moral obligation to society, to victims and survivors of Nazism, and to posterity is to repudiate Pernkopf and all he represented."[33] Barring a more comprehensive investigation and discussion of the text and its origins, however, it is both difficult to know what exactly we are to repudiate about Pernkopf and his anatomy atlas and impossible to adequately memorialize the victims of Nazism that may be depicted in the text.

This point leads to another issue with Panush's arguments. Panush writes that "the Nazis, Nazi physicians, and their era represented a horrible, unprecedented evil, repugnant to all humanity and medical tradition."[34] Panush's anger and offence in the above statement is both understandable and reflective of beliefs held by many of his

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individual by denying their memory. Eric R. Varner, *Mutilation and Transformation: Damnatio Memoriae and Roman Imperial Portraiture* (Leiden: Koniklijke Brill, 2004).

[32] Panush and Briggs "The Exodus of a Medical School," 963.

[33] Panush,"Nazi Origins of an Anatomy Text," 1633-1634.

[34] Panush, "Nazi Origins of an Anatomy Text,"1633-1634.

contemporaries.[35] The Nazis, Nazi physicians, and their era have come to represent "a horrible unprecedented evil, repugnant to all humanity."[36] But if Nazis and Nazi physicians are so repugnant to the medical tradition why then did it take so long for the medical community to address the Nazi origins of the text?

It would be easy to excuse, or dismiss, this ambivalence based on ignorance on the part of the communities involved, who reacted accordingly when the text's origins were revealed, but this was not entirely the case. While some may have been ignorant of the text's origins, as Dr. Israel found,[37] there were numerous individuals who had at least a passive knowledge of the Nazi background of the text and continued to use it as a result of its high quality.

There is a very real disconnect between the ways in which current physicians view the text in comparison with their predecessors. A close investigation of the Pernkopf case reveals not only unsettling issues with the text itself, but also brings up questions concerning our contemporary understanding of the Nazi period in medical history. The Pernkopf case vividly illustrates the mutability of seemingly immutable ethical ideals, and demonstrates an unusual historical ambivalence to medical information derived from the Nazi era that runs counter to current perceptions of the period.

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[35] One similar example is Michael J. Franzblau's (clinical professor of dermatology at the University of California) comments in the *New York Times*. Michael J. Franzblau, "Throw Away Evil Atlas," *New York Times,* 3 December 1996, A24.

[36] Panush, "Nazi Origins of an Anatomy Text: The Pernkopf Text [letter]," 1633-1634.

[37] Wade, "Doctors Question Use of Nazi's Medical Atlas," C1.

While contemporary commentators like Panush assume that "the perversions of Nazism override all other issues"[38] this was not always the case. For example it was long known that Nazi symbols were contained in the *Pernkopf Atlas*, but they were generally ignored and did not deter previous generations of doctors and surgeons from consulting it. Nor did they affect its first review in the *Annals of Internal Medicine*. Indeed, in 1964 the Atlas's reviewer Edward J. Huth went as far as to say that the swastika-filled volume[39] was a "magnificently conceived and finely printed book [that] would make a thoughtful and generous gift to one's nephew or niece who has just put his or her foot in medical school for the first year."[40] This was followed by four decades of positive reviews in many of the most respected medical journals. Although the swastikas were airbrushed out of later editions of the text a latent knowledge of its origins remained in the medical community. Before 1985, however, not one comment was published about either the Nazi symbols or the political orientation of the atlas's author.

It is difficult to gauge the exact extent to which medical professionals were aware of the background of the text, but the way in which Howard Israel was made aware of its origins is one indication. In contrast to Panush's assertions, even after the background of the text was revealed and publicized, some still advocated its use. "If it is good anatomy," argues Malcolm H. Hast, "you can't throw it away. I used the book for years before I knew any of this. Should I try to expurgate my mind of the knowledge I gained from the book?"[41]

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[38] Panush and Briggs, "The Exodus of a Medical School," 963.

[39] See tables 6-7 for a complete list of the Nazi Symbols contained in the First and Second English Editions of the text.

[40] Huth, "Review of *The Atlas of Topographical and Applied Human Anatomy,* by Eduard Pernkopf," 605-606.

It is repeatedly stated that the Pernkopf anatomy text, along with other scientific information obtained during the Nazi era, should not be used, but rather should serve to memorialize the victims of the Nazis, so the atrocities committed during the Second World War are not repeated. The Pernkopf case demonstrates, however, is that it is impossible to remember something that is not understood. Rather than view Pernkopf in terms of the particularities of who he was and what he did, there has been a propensity on the part of commentators to reduce him to an instance of a type – the Nazi doctor.

In the majority of medical historiography, a line is drawn between Nazi doctors, and the rest. While it continues to be affirmed that it is impossible for any other medical crime committed in another country, or in any other time period, to rival the medical atrocities that were committed during the Second World War, an unacknowledged collective amnesia exists on the part of many when it comes to the decades during which these crimes were overlooked and ignored. There are many factors that led to the delay in the reevaluation of the text, but in order to adequately investigate and discuss them, it is imperative to first re-think the black and white arguments that accompany the discussions of medical practice during the Nazi era.

THE "DEAD END OF DEMONIZING"

Panush tells us that "Pernkopf and his ilk were outside the bounds of human decency," and that "it is our moral obligation to society, to victims and survivors of

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[41] Malcolm Hast quoted in Nicolas Wade, "Doctors Question Use of Nazi's Medical Atlas," *New York Times*, 26 November 1996, C1.

Nazism, and to posterity is to repudiate Pernkopf and all he represented."[42] While Panush's comments are well intended, they have the effect of placing Pernkopf outside of both medicine and humanity. In failing to acknowledge the continuities between Nazi and contemporary medical practices, and continuing to categorically demonize Nazi doctors, his comments serve to reinforce an "us vs. them" or "good vs. evil" view of medical history. Robert Proctor, a historian who has worked on issues of Nazi racial hygiene and the links between Nazism and anti-smoking campaigns, states that issues like this

> are often ignored because we do not seem to be comfortable with the idea that people with rotten ethical ideals could have been 'ahead of their time' in the spheres of medicine and public health. The more comfortable image seems to be a sweeping chiaroscuro. If Nazism is the absolute embodiment of evil, we need not look at the disturbing links to what came before or after.[43]

In the case of the Pernkopf, as comforting as such neglect may be, it comes at the cost of negating a more complete understanding of the text and its legacy.

As Dr. Donald G. Schilling points out in his article "The Dead End of Demonizing: Dealing with the Perpetrators in Teaching the Holocaust," there are a number of reasons the maintenance of black and white arguments are useful when discussing issues relating to the Holocaust. First, they provide straightforward explanations of many aspects of the Final Solution.

> Simply put the Final Solution in all its corrosive horror was the work of evil psychologically deformed men. Second, this explanation lifts much of the burden of guilt from the "normal, average" citizens in Germany and other countries. Third, it frees all of us from troubling questions about the capacity of normal human beings to participate in an evil project and commit acts of brutality and

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[42] Panush, "Nazi Origins of an Anatomy Text," 1633.

[43] Robert Proctor, *The Nazi War on Cancer* (Princeton, N.J.: Princeton University Press, 1999), 276.

> murder. We are obviously fundamentally different from the perpetrators and thus can preserve our sense of humanity and morality.[44]

One could argue that it is right to "de-humanize" Nazi physicians, as they de-humanized their victims; however, if modern physicians fail to see any humanity in Nazi doctors, then it is impossible to understand and learn from their mistakes. As Schilling continues "demonizing the perpetrators cuts us off from a deeper more complete understanding of human behavior, our capacity for evil, and therefore of our ability to guard against future atrocities."[45]

In an attempt to increase understanding of the holocaust, many historians have made concerted efforts to break down these stereotypes; however, there is a feeling by some that "seeking to understand the perpetrators will result in an inability to condemn evil, in a loss of moral judgment, or to moral confusion."[46] Baruch C. Cohen emphasizes the strength of these sentiments within the Jewish community in his article "The Ethics of Using Medical Data from Nazi Experiments":

> The moral climate in the Jewish community is unforgiving to those who find any redeeming merit from the Nazi horrors. Anyone who dares suggest the historical lessons which can be learned from the holocaust, or from the victims' suffering, risks being labeled a heretic or a sensationalist bent on distorting history from personal gain. Many in the community seriously fear that insights might replace condemnation of the Nazi evil.[47]

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[44] Donald G. Schilling, "The Dead End of Demonizing: Dealing with the Perpetrators in Teaching the Holocaust," in *New Perspectives on the Holocaust: A Guide for Teachers and Scholars* (New York: New York University Press, 1996), 197-198.

[46] Schilling, "The Dead End of Demonizing," 199.

[47] Baruch C. Cohen, "The Ethics of Using Medical Data from Nazi Experiments," In *Bioethical and Ethical issues Surrounding the Trials and the Code of Nuremberg: Nuremberg Revisited*, ed. Jaques J. Rozenberg (Lewiston: The Edwin Mellen Press, 2003), 132.

The complexities of the Pernkopf case make it difficult to unilaterally condemn the atlas. As a result this so-called "condemnation of Nazi evil" was slow to materialize. And as John Weiss points out in *The Politics of Hate: Anti-Semitism, History and the Holocaust in Modern Europe* explanations aid in understanding and memory.

> It is important to witness and remember, but it is essential to explain. Without more knowledge of its long-term historical causes, the Holocaust may well end as an inexpiable enigma, a searing and bitter memory of horror kept alive chiefly within the Jewish community. As such the Holocaust will offer little help to those who hope to learn from its causes and possible ways to avoid future if lesser mass murders with different killers and victims."[48]

It is tempting to agree with the French adage "*Tout comprendre c'est tout pardonner*,"[49] but not making an effort to understand is in many ways a more pernicious course of action, for, as Christopher Browning states he does "not accept…the old clichés that to explain is to excuse, to understand is to forgive. Explaining is not excusing; understanding is not forgiving."[50]

The Pernkopf case is an example of the difficulties associated with the maintenance of black and white arguments. For fifty years the problems associated with the text were ignored and the text was lauded and praised for its accuracy, scale, and quality illustrations. Recently the text has been almost universally condemned on account of its Nazi creator, the National Socialist symbols contained in the text, and the questionable origins of the bodies used to illustrate the text. Zygmunt Bauman asserts that there are issues with "how to condemn the criminals while making sure that the innocence of modern men and women at large, together with the society which made them what they are, emerge from trial with their reputation unscathed and untarnished. Exoneration is the other side of the coin, and it is by that other side that the value of the coin is made attractive and desirable."[51] The debates surrounding Pernkopf's text have mirrored Bauman's coin analogy, one side condemns, the other commends. Although the public perception of the Pernkopf text has flipped, it has always been one sided, and no one has yet examined the reasons for the change.

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[48] John Weiss, *The Politics of Hate: Anti-Semitism, History, and the Holocaust in Modern Europe* (Chicago: Ivan R. Dee, 2003), 4.

[49] Schilling, "The Dead End of Demonizing," 199.

[50] Christopher R Browning, *Ordinary Men: Reserve Police Battalion 101 and the Final Solution In Poland* (New York: Harper Perennial, 1998), xx.

THE PERNKOPF ANATOMY TEXT EXISTS IN A MORAL AND ETHICAL GREY AREA

Eduard Pernkopf's *Topographische Anatomie des Menschen: Lehrbuch und Atlas der regionär-stratigraphischen Präparation* is one of the more problematic remnants of the Nazi regime to have been discussed in recent memory. Combining arrestingly accurate anatomical illustrations and masterful dissection techniques, the book was used to train doctors and surgeons internationally for more than sixty years. Post-war western medicine, however, has made a concerted effort to distance itself from everything relating to the Third Reich; thus, the 'discovery' of the Nazi origins of the text book, and its long-term use on the part of the medical community, elicits innumerable questions for which there are few answers. The book itself represents a concrete link between Nazis and modern medical doctors, and so serves to undermine prevalent discourses that all Nazi medicine was simply 'bad science' and should be dismissed.

Given the substantial controversy that surrounded the medical atlas over the past ten years, one would assume that a significant amount of historical research had been conducted on both the text and its author. This is not the case. The only sustained research into the issues surrounding Pernkopf anatomy text was an internal investigation conducted by the University of Vienna.[52] The resulting 600 page report covered many aspects of Eduard Pernkopf, his anatomy text, and the war-time activities that took place at the University of Vienna. The findings, however, were not widely publicized and those that were published were likely informed by an interest in preserving the university's international reputation.[53] One example of this practice was Daniela C. Angetter's brief summary of the Senate Investigation that appeared in the *Lancet* in 2000. Beginning her discussion of the text with a discussion of the long Viennese tradition of using executed prisoners for anatomical purposes and ending her article accusing the medical establishment of a "lack of interest" in the use of bodily remains, Angetter's article normalized and externalized the issues with the Pernkopf text.[54]

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[51] Zygmundt Bauman, *Modernity and the Holocaust* (Cornell University Press, 2000), 227-228.

The Pernkopf anatomy text incited vigorous debate in the medical community, and many acclaimed medical doctors, ethicists, and historians weighed in on the issue. Several articles highlighted concerns with the text and called for an investigation by Austrian universities. The majority, however, solely concerned the current use of the text. A lack of sustained research into the background of the atlas has meant that many of these articles have taken the form of opinion pieces and editorials.

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[52] Gustav Spann, *Senatsprojekt der Universität Wien Untersuchungenen Zur Anatomischen Wissenschaft in Wien: 1938-1945* (Wien: Universität Wien, 1998).

[53] The issues concerning the University of Vienna Senate investigation will be discussed further in Chapter III.

[54] Daniela C. Angetter, "Anatomical Science at the University of Vienna 1938-1945," *The Lancet* 355 (2000): 1454-1457.

Although there are fundamental issues with the framing and dissemination of the original Senate Report, and the tone of many of the articles on the Pernkopf text, the existing research provides both valuable factual information concerning the atlas that can not be found elsewhere and interesting perspectives on the controversy itself. In addition, the numerous book reviews published on the Pernkopf text over the decades offer fascinating insights on the text prior to the controversy.

There is both an abundance and dearth of secondary sources that one can draw from when examining the contexts in which the Pernkopf anatomy text is situated.[55] While a strong sentiment persists that everything that can be written about Nazi doctors has been, the majority of work on the subject has been conducted only in the past twenty years. In February of 1987, more than 40 years after the end of the Second World War, historian Michael H. Kater began an article on doctors and medicine in Nazi Germany with the following statement "thus far a comprehensive history of physicians and their profession in Adolf Hitler's Third Reich, from 1933 to 1945, remains unwritten."[56] Kater cited a lack of available sources and an unwillingness on the part of the German medical profession to deal with its past as reasons for this historiographical omission.[57] In the last two decades this situation has begun to change. The pioneering and underappreciated work of official German Nuremberg trial observers Alexander Mitscherlich and Fred

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[55] Given the multiple contexts and literatures involved, a comprehensive historiography will not be provided here. In the spirit of the complexities of the issues historiographies will be progressively revealed though the narrative of each chapter.

[56] Michael H. Kater "The Burden of the Past: Problems of a Modern Historiography of Physicians and Medicine in Nazi Germany," *German Studies Review* 10, no. 1 (1987): 31.

[57] Kater, "The Burden of the Past," 31-32.

Mielke[58] has been joined by that of Kater,[59] Kudlien,[60] Lifton,[61] Annas; Grodin,[62] Aly, Chroust, Pross,[63] Proctor,[64] and Weindiling[65] among others, each contributing unique insights into the subject. These studies sought not to simply universally condemn the Nazi doctor, but to increase our understanding of medicine in the Nazi period. In this tradition this study seeks neither to vilify nor exonerate Eduard Pernkopf or his text, but rather use it as an opportunity to enrich our still nascent understanding of our views of the Nazi period.

When discussing the Tuskegee Syphilis experiment John C. Fletcher expressed the need to make certain types of "transhistorical moral judgments" in order "to be loyal to moral norms and to transmit moral evolution to a new generation."[66] There is a legitimate reason and place for these discussions and judgments on the part of practitioners, however, as a result of the debates on the Pernkopf text these judgments have been made, and the question "what should we do with Pernkopf?" has been asked and answered. What has not been asked, however, is why now? If all Nazi medicine is intrinsically bad, why did it take so long to address the issues of a swastika-filled text created by a Nazi?

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[58] The pair and their work will be discussed at length in Chapter II. Alexander Mitscherlich and Fred Mielke *Medizin ohne Menschlichkeit*: *Medizinische und eugenische Irrwege unter Diktatur, Burokratie und Krieg* (Heidelberg: Verlag Lambert Schneider, 1949).

[59] Michael H. Kater, *Doctors Under Hitler* (Chapel Hill: The University of North Carolina Press, 1989).

[60] Fridolf Kudlien, *Ärzte im Nationalsozialismus* (Cologne: Kiepenheuer & Witsch, 1985).

[61] Robert J. Lifton, *The Nazi Doctors: Medical Killing and the Psychology of Genocide* (New York: Basic Books, 1986).

[62] George J. Annas and Michael A. Grodin, *Nazi Doctors and the Nuremberg Code: Human Rights in Human Experimentation* (NewYork: Oxford University Press, 1992).

[63] Götz Aly, Peter Chroust, and Christian Pross, *Cleansing the Fatherland: Nazi Medicine and Racial Hygene* (Baltimore: The Johns Hopkins University Press, 1994).

[64] Robert Proctor, *Racial Hygiene: Medicine under the Nazis* (Cambridge: Harvard University Press, 1988); *The Nazi War on Cancer*. (Princeton: Princeton University Press, 1999).

[65] Paul Weindling, *Nazi Medicine and the Nuremberg Trials: From Medical War Crimes to Informed Consent* (New York: Palgrave Macmillan, 2004).

If, as many contend, the Pernkopf anatomy text is an artifact that is inherently "tainted by its association with Nazism,"[67] then it is dehistoricized and commentators are right to voice their indignation in the absence of critical inquiry. If, on the other hand, the current meaning of the text is the result of a contemporary shift in public perceptions of the Nazi period, then the text can not be fully understood apart from an appreciation of the factors that led to its reevaluation. In light of the fact that it took more than 50 years for criticism to arise with respect to the text, it seems odd that no attention has been paid to the latter position.

Although sweeping claims have been made concerning the quality of the text and the politics of its creator, its significance within the history of anatomy has been almost completely ignored, as has its relationship to the political situation at the University of Vienna prior to 1938. These omissions may be partially explained by the space constraints of medical journals or the unavailability of many archival resources. The silences, however, could also be linked to the highly charged controversial contexts in which the text is situated. While it has been relatively easy to condemn the text and its relationship to holocaust medical history, within the legal context it brings up numerous difficult questions regarding the definition of war criminals and the prosecution of those criminals following the war. Concurrently, a close examination of the issues associated with the Pernkopf text within the context of the European anatomical tradition elicits general ethical questions regarding the history of anatomical practices and disrupts the narrative of progress that persists in much of the history of science. Perhaps most problematic, is the text's relationship to the complex political situation in Austria during the Second World War. A world-renowned anatomy textbook created by an Austrian Nazi who may have used executed Austrian patriots for its illustrations is difficult to discuss, and so even more difficult to memorialize. More broadly, however, a close examination of the history of the Pernkopf anatomical atlas undermines our taken for granted assumptions concerning our contemporary views of anatomical, medical, and Austrian political history during the Second World War.

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[66] John C. Fletcher "A Case Study in Historical Relativism: The Tuskegee (Public Health Service) Syphilis Study," in *Tuskegee's Truths: Rethinking the Tuskegee Syphilis Study*, ed. Susan M. Reverby (Chapel Hill: University of North Carolina Press, 2000), 279.

[67] Riggs, "What Should We Do about Eduard Pernkopf's Atlas?" 382.

Beginning with an examination the original German editions of the text, and drawing from the Senate Report of the University of Vienna and the physicians discourse, in addition to archival material collected on location in Austria, this thesis will explore the complex relationships between anatomy, law, medicine, and Austrian politics and their effects on the discussions regarding the Pernkopf text. It will argue that the delay in the reevaluation of the Pernkopf text can not be attributed to ignorance or "lack of interest." Rather the long postponement in the reevaluation of the Pernkopf text was the result of a fundamental ideological shift in the public perception of Nazi medicine.

In order to explore and discuss this ideological shift, this thesis will evaluate the ways in which the divergent, yet interrelated, anatomical, legal-medical, and political contexts in which the text is situated contributed to the delay in the recognition and discussion of the issues associated with the text. This process, however, is not a linear one, as the Pernkopf anatomy atlas exists in a moral and ethical grey area, at the intersection of multiple discursive spheres, each incomplete without the others.

Chapter I, **Normalized - The Anatomy of *Pernkopf*,** will momentarily divorce Pernkopf from its highly charged political and medical contexts in order to gauge its significance within the anatomical tradition. It will provide a background on the Pernkopf anatomy text and situate it within the European anatomical tradition; it will also discuss the ways in which both the high quality of the Pernkopf text and the general ethical issues associated with anatomical history contributed to the delay in the reevaluation of the atlas and its creator.

Chapter II, **Legalized and Legitimized – Medicine the Law and Pernkopf**, will address the factors that have shaped our current views of Nazi medicine. It will highlight the ways in which the Nuremberg Medical Trial codified public opinions of Nazi doctors, and will trace the ways in which the medical ethics that guide physicians, as well as the public and academic perceptions of doctors who practiced medicine during the Third Reich have changed substantially over the last six decades; it will discuss the factors that contributed to changing public perceptions of Nazi physicians and to the maintenance of those discourses within communities. It will argue that the small number of doctors prosecuted at the Nuremberg Trial, in combination with the active suppression and denial of information derived from the trial, contributed to the delay in the reevaluation of the Pernkopf anatomy text.

Chapter III, **Problematized - The Politics of Pernkopf**, will explore the effects that Austria's complex political situation have had on the reception of Eduard Pernkopf and his anatomy text and will demonstrate how Eduard Pernkopf was implicated in the ideological and political systems that provided him with his cadavers. It will argue that the difficult and complex nature of Austrian politics was a significant factor in the delay of the reevaluation of the Pernkopf text, and also informed the recent Senate Project of the University of Vienna.

An examination of the Pernkopf anatomy text does not yield easy answers. Its difficulty, however, is not a legitimate reason to throw it out; rather, one of the greatest benefits of the Pernkopf text is its uncomfortable ability to link the divergent histories of anatomy, law, medicine, and politics, with the Nazi past, forcing its readers to reevaluate the place of Nazism in historiography. As a concrete link between Nazi doctors and modern medicine, Pernkopf serves as a unique and profitable case study in medical history, and is a valuable starting point for future discussions.

As useable and used Nazi data, the Pernkopf anatomy text is unique and an exception to much of the current literature on Nazi medicine. Rather than dismiss Pernkopf as an anomaly, this thesis takes the unique opportunity to discuss the difficult issues that surround the text in order to increase our understanding and honor the memory of those depicted in it, and to explore the complexities surrounding the issues that shape our view and contemporary understanding of anatomy, law, medicine, and politics during the Nazi period.

CHAPTER I: NORMALIZED - THE ANATOMY OF PERNKOPF

> *It was the Atlas of Eduard Pernkopf (1888-1955) which brought this type of anatomy to a sort of culmination. The work, supervised by Pernkopf, Director of the Anatomical institute in Vienna, was started in 1933, continued as well as it could during the war years, and was completed twenty-two years and nearly nine hundred illustrations later...Pernkopf's work has rightly been immensely popular, being published in several languages and republished in both larger and smaller forms.*[68]

> *This anatomical atlas by a committed Nazi, Dr. Pernkopf, is evil. The creator was evil, and it should have no place in any medical library. I suggest that it be tossed into the waste bin of time. For those who might be concerned about the loss of a valuable teaching atlas, I can attest that... there is no need for the atlas.*[69]

INTRODUCTION

Eduard Pernkopf's *Topographische Anatomie des Menschen* is significant for its contribution to the field of anatomy, but its significance needs to be examined within the context of the discipline. The above noted quotes, however, reflect the polarized nature of the discussions concerning the text. Until the early 1990s opinions of the atlas were generally positive. The text was praised for its illustrations and called "the pinnacle of color anatomical illustration."[70] Since the controversy erupted, however, responses to the atlas have been almost unequivocally negative, and the once highly regarded atlas has been called "tedious" [71] and it has been suggested that "it be tossed into the waste bin of time."[72]

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[68] K.B. Roberts and J.D.W. Tomlinson, *The Fabric of the Body: European Traditions of Anatomical Illustration* (Oxford: Clarion Press, 1992), 593.

[69] Franzblau, "Throw Away Evil Atlas," 24 A.

[70] Williams, "The History of Eduard Pernkopf's," 2.

[71] Wissmann, "Springtime for Pernkopf," 153.

[72] Franzblau, "Throw Away Evil Atlas," 24 A.

Pernkopf's use of bodies has played a particularly prominent role within these debates. The historical significance (or lack of significance) of the text has been used to either normalize or condemn the anatomical atlas, and when historical 'facts' are used to support an argument they are often completely divorced from their context. This lack of contextualization has affected many aspects of the Pernkopf controversy and has allowed for the perpetuation of black and white arguments concerning the quality of the text.

Reactions to the atlas, however, have been heavily influenced and politicized by the contemporary situations in which they were formed, and very little effort has been made to situate the text within the European anatomical tradition. In order to explore the factors that led to the reevaluation of the text it needs to be carefully considered as separate from the broader legal, medical, and political contexts in which it was produced. This chapter seeks to momentarily separate the text from its contemporary politics before re-contextualizing it within its respective political and legal frameworks.

Historians have evaluated the importance of anatomical texts based on three criteria 1) the quality of the illustrations; 2) advances in medical knowledge; and 3) the degree of technical sophistication in terms of printing and distribution.[73] Based on these criteria this chapter will first explore the significance of the Pernkopf text within the European anatomical tradition and will then address Pernkopf's use of large numbers of executed prisoners to create his text within that context.

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[73] This is a somewhat contentious issue. There are very few monographs that provide overviews of the history of European Anatomy - one of the most renowned is Ludwig Choulant, *Geschichte und bibliographie der anatomischen abbildung nach ihrer beziehung auf anatomische wissenschaft und bildende kunst* (Leipzig: Rudolph Weigel, 1852) - the authors of those that are extant, however, had the difficult task of negotiating the complex relationship between art, medicine, and technology, within the anatomical tradition. Further conflating the issue, are the tangled network of religious, legal, and ethical considerations that influence anatomical practices. A Common practice in one historical period is an illegal offence in another. Considering these multiple complex relationships, it is difficult to know what exactly makes a contribution to anatomy acceptable, let alone significant. As most early medical historians were also physicians, however, they had a tendency to agree with Roth when he said "Ein Arzt war es der modern Anatomie schuf, nicht ein Künstler." H. Roth in J. Playfair McMurrich,

It will first argue that the Pernkopf anatomy text is significant to the history of anatomy as a result of its high quality and scientifically accurate illustrations, pioneering use of the four-colour photographic printing process, and monumental scale. It will then highlight how, in spite of its significance, the use of large numbers of executed prisoners to illustrate the text was somewhat ethically problematic even without consideration of the political context in which it was created. This study will then explain the ways in which these two factors served to normalize the concerns with the work and contributed to the delay in the reevaluation of the text.

THE PERNKOPF ANATOMY TEXT – ILLUSTRATIONS, SCALE, REPRODUCTION

First published in 1937, the Pernkopf anatomy text (*Topographische Anatomie des Menschen*) was the life's work of its author Dr. Eduard Pernkopf, an anatomist who deeply desired to produce the definitive anatomy textbook of his time. He worked on the text over a twenty-two year period, between 1933 and his death in 1955. Pernkopf drew from much of the European and Viennese anatomical tradition to create his *Topographische Anatomie des Menschen*. Although the Pernkopf anatomy text did not demonstrate new scientific discoveries, its scale, high quality and scientifically accurate illustrations, and use of new colour printing techniques to reproduce the images, make the text significant within the history of European anatomy.

Leonardo Da Vinci the Anatomist (Baltimore: Williams & Wilkins Company for the Carnegie Institution of Washington, 1930), 4.

Dr. Eduard Pernkopf was born on November 24, 1888, in the small village of Rappottenstein in Lower Austria. The youngest son of a rural physician, Pernkopf developed an early love of music that he likely would have pursued as a career were it not for the death of his father in 1903. His death placed Pernkopf's family in a difficult financial situation; he later followed in his father's footsteps and attended medical school, attaining his medical degree in 1912.[74]

During his time as a medical student in Vienna, Pernkopf's gift for anatomy was noticed by the Director of the Anatomy Institute, Dr. Ferdinand Hochstetter. Pernkopf subsequently became his assistant, and praised his mentor's "technical mastery in the design and execution of the most subtle preparation and conservation methods."[75] Inspired by Hochstetter, Pernkopf began to develop a small anatomical manual for his own students. As David J. Williams[76] explains, "as the manual's scope grew, the project attracted the attention of the publisher Urban and Schwarzenberg, then based in Vienna. After revising his original plan and organizing the work on a much larger scale, Pernkopf signed a six page contract with the publisher in October 1933."[77]

To demonstrate his gratitude to Hochstetter, Pernkopf dedicated the second volume of his atlas to him, writing:

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[74] Williams, "The History of Eduard Pernkopf's," 2.

[75] Erna Lesky, *The Vienna Medical School of the 19th Century* (Baltimore: The Johns Hopkins University Press, 1976), 460.

[76] David Williams is an associate professor of medical art and associate director of Medical Illustration and Communications in the School of Veterinary Medicine at Purdue University. Williams was one of the first to publish on the Pernkopf text.

[77] Williams, "The History of Eduard Pernkopf's," 3.

Meinem verehrten Lehrer,
dem groβen Meister der Anatomie,
Ferdinand Hochstetter
in Dankbarkeit
zugeeignet.[78]

In order to produce the text, Pernkopf assembled some of the most talented anatomical illustrators of his time. Pernkopf's main group of artists were Erich Leiper (1898 - 1974), Ludwig Schrott Jr. (1906 - 1970), Karl Endtresser (1903 - 1978), and Franz Batke (1903 - 1983).[79] Erich Leiper was the first artist to work with Pernkopf. Leiper was self taught and began working on anatomical illustrations after he answered an advertisement to work for the publishers Urban and Schwarzenberg. His success on his first assignment led to additional commissions until he eventually came to work for Pernkopf. The second artist to work for Pernkopf was Ludwig Schrott Jr. The son of an illustrator, Schrott trained as a graphic artist prior to working for Pernkopf. The third was Karl Endtresser. Endtresser had more than eight years of fine art training from the *Akademie der bildenden Künste*. The most well educated of all of the Pernkopf painters, Endtresser earned the title *academischer Maler* (academic painter). Williams calls Endtresser "the consummate Viennese, a robust man who lived to the fullest and cultivated vivacity; indeed he seemed to be a man without problems. He painted easily and felt quite comfortable with his work."[80] The final member of the core group of Pernkopf artists was Franz Batke, another academic painter, whose strength was his use of colour. Williams asserts that Batke's "use of colour is so outstanding that few of the high-quality reproductions of his work in the *Topographische Anatomie des Menschen* do them full justice."[81]

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[78] Eduard Pernkopf, *II Band: Bauch, Becken und Beckengleidmaβe, Erste und Zweite Hälfte,* ii.

[79] Other artists, included Franz's Batke's wife, Josefine Koller-Batke, and Ludwig Schrott Jr.'s father, Ludwig Schrott.

[80] Williams, "The History of Eduard Pernkopf's," 7.

The extraordinary illustrations, like those in Albinus' *Tabulae sceleti et musculorum corporis humani,*[82] were the product of the close collaboration between artist and anatomist.[83] Like Albinus, Pernkopf prepared the cadavers, and the artists created illustrations based on his preparations. This collaboration is vital to the successful production of anatomical texts because few anatomists have the artistic ability to accurately render their dissections, and few artists have the medical knowledge to distinguish important from unimportant anatomical features.[84]

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[81] Williams, "The History of Eduard Pernkopf's," 7.

[82] Bernhard Siegfried Albinus, *Tabulae sceleti et musculorum corporis humani* (Leiden, 1747).

[83] Dutch anatomist Bernhard Siegfried Albinus spent much of his distinguished career refining and developing anatomical illustration processes in order to best represent an idealized and anatomically correct human form. Early in his career he collaborated with master engraver Jan Wandelaar (1690-1751) to reproduce the images in the *Fabrica* and other famous anatomical works with the new copper plate engraving processes. He eventually produced his own anatomical text. The resulting work required more than twenty of meticulous labour to complete. First published in 1747, *Tabulae sceleti et musculorum corporis humani* was the product of Albinus' long and close working relationship with Wandelaar who lived in a part of Albinus' home for many years. Roberts and Tomlinson, *The Fabric of the Body,* 327.

[84] Roberts and Tomlinson note that the relationship between the artist and anatomist is paramount to the creation of anatomical texts, stating "At the centre of any scheme to issue a book of scientific anatomy remains, in twentieth-century Vienna and Munich as in Renaissance Padua and Venice, the anatomist and his collaborator, the artist. These two were and are, shackled together in a laborious, time-consuming, and inevitably expensive enterprise. Without them, nothing." Roberts and Tomlinson, *The Fabric of the Body*, 584.

There are a number of factors that distinguish the images in the Pernkopf anatomy text from other illustrations. First, whereas other texts, like *Gray's Anatomy*,[85] depict, flat one-dimensional illustrations, the images in the Pernkopf text follow the "Viennese style." In this style illustrations are highly detailed. Tissues, bones, and ligaments are depicted in a realistic manner. Artists use subtle shading variations to give the images texture and produce a rounded, almost three-dimensional, effect. Second, unlike many other anatomy texts, the images in the Pernkopf anatomy text are neither idealized nor diagrammatized in the traditional sense. Images in earlier important anatomic texts, like Vesalius'*Fabrica*,[86] Albinus' *Tabulae sceleti et musculorum corporis humani,*[87] or Bourgery's *Traité complet de l'anatomie de l'homme comprenant la médicine operatoire,*[88] were based on Classical Greek artistic aesthetics. The works depict an idealized 'man' and feature smooth, hairless, unwrinkled skin. Other anatomical texts, like Henry Gray's *Anatomy Descriptive and Surgical*,[89] used a more diagrammatic-style that shows detailed views of parts to facilitate medical student learning. In contrast, the images in the Pernkopf text are more "realistic." The images are not of an idealized 'man'; rather, the dissections are of individuals. The artists depict the body in a life-like fashion, and include facial and body hair, wrinkles, and crooked teeth in the paintings. When the faces of the subject are shown, the illustrations are almost portrait-like. In addition, Pernkopf and his artists intended the atlas for a user with a high level of anatomical knowledge and sought to demonstrate the intricate relationships between anatomical features though the illustrations. As a result, while the Pernkopf images can be appreciated for their accurate depictions of the human body, they require a preexisting medical knowledge to appreciate and utilize fully. Thus, unlike *Gray's Anatomy*, the text is more useful to specialists and surgeons than to first year medical students.[90]

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[85] Henry Gray, *Anatomy Descriptive and Surgical* (Philadelphia: Blanchard and Lea, 1859).

[86] Andreas Vesalius, *De Humani Corporis Fabica Libri Septem* (Basile: Johannes Opornius, 1543).

[87] Albinus, *Tabulae sceleti et musculorum corporis humani.*

[88] Jean-Baptiste Marc Bourgery, *Traité complet de l'anatomie de l'homme comprenant la médicine operatoire: avec planches lithographiées d'après nature par N.H. Jacob* (Paris: C.A. Delaunay, 1831-1854). Bourgery produced 726 hand coloured lithographs for his eight volume *Traité complet de l'anatomie de l'homme.* The volumes were published over a twenty three year period, volume one appearing in 1831 and the eighth in 1854, have been called "one of the most lavishly illustrated anatomical and surgical texts ever published." Julie V. Hansen and Suzanne Porter, *The Physician's Art: Representations of Art and Medicine* (Durham: Duke University Medical Center Library and Duke University Museum of Art, 1999), 61.

[89] Gray, *Anatomy Descriptive and Surgical.*

The third and perhaps most distinguishing factor of the illustrations in the Pernkopf text is the use of colour. Where most texts were produced in black and white, or, in the case of Jean-Baptiste Marc Bourgery's *Traité complet de l'anatomie de l'homme,*[91] produced as black and white lithographs and hand painted, the original images created for the Pernkopf text were watercolour paintings. Like the wax models in *La Specola*,[92] the artists' use of colour allowed readers to distinguish various anatomical features that are almost indistinguishable from each other in a real dissection. As a result the images in the Pernkopf anatomy text have a hyper-real appearance; like three-dimensional anatomical wax models, the images in Pernkopf seem "truer to the colourful vitality we expect to find within ourselves than the dull grey-brown confusion that dominates the appearance of an actual dissection of a corpse."[93]

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[90] Snell wrote: "This outstanding book should be of great value to anatomists and surgeons. It is in a class of its own and will continue to be valued as a reference even if its prohibitive cost and great detail make it unsuitable for purchase by medical students. Snell, "Pernkopf Anatomy," 205.

[91] Bourgery, *Traité complet de l'anatomie de l'homme.*

[92] *La Specola* was a very famous anatomical museum, commissioned by Duke Leopoldo. It featured remarkably life-like wax anatomical models of the human body. The models, made under the supervision of physiologist Felice Fontana (1720-1805) and the anatomist Paolo Mascagni (1752-1815), resulted from Duke Leopoldo's desire to

In addition, Pernkopf was a perfectionist. His one requirement of his artists was that the paintings of his dissections look like real tissue. Indeed, not all of the artists who worked for Pernkopf were able to live up to his requirements. Williams asserts that many artists tried to work for Pernkopf, but could not meet his high standards. Pernkopf assisted the artists somewhat with their colour selection, but the artists relied "mostly on their own instincts when devising hues. Since dissection specimens are quite colourless, perhaps the genius in the painter's work, and especially in that of Batke and Leiper, was their use of colour to make the dissections seem alive."[94]

Not only were the images in the Pernkopf anatomy atlas outstanding, but they were also produced on a large scale. Like Vesalius' *Fabrica,*[95] and Bourgery's *Traité complet de l'anatomie de l'homme*,[96] the Pernkopf anatomy text was a monumental

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educate the public about science and his "antipathy to the use of cadavers in anatomical teaching, and hoped to obviate this necessity by providing, detailed, true to life models." Roberts and Tomlinson, *The Fabric of the Body*, 387.

[93] Martin Kemp and Marina Wallace, *Spectacular Bodies: The Art and Science of the Human Body from Leonardo to Now* (Berkeley: University of California Press, 2000), 59.

[94] Williams, "The History of Eduard Pernkopf's," 7.

[95] Vesalius, *De Humani Corporis Fabica Libri Septem.*

multi-volume work. The work required more than twenty years to complete, and covers the intricacies of the entire human body over the seven volumes; beginning with a general overview of the body, the volumes progress through various areas of the body, each section moving through layers of musculature until reaching bone.[97] One reviewer mentioned that it was the "thoroughness and diversity" of the large number of illustrations that distinguish Pernkopf from other anatomical texts.[98]

The seven books of the Pernkopf anatomy atlas feature more than nine-hundred illustrations. Volume I: *Allgemeines, Brust, und Brustgliedmaße,*[99] was published in two books in 1937. Volume II: *Bauch, Becken und Beckengliedmaße,*[100] was also published in

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[96] Jean-Baptiste Marc Bourgery, and Nicolas Henri Jacob. *Altlas of Human Anatomy and Surgery, complete Edition of the Coloured Pates*, ed. Jean-Marie Le Minor and Henri Sick (London: Taschen, 2005).

[97] In addition, the German editions of the text contain both anatomical illustrations and detailed text written by Pernkopf. Pernkopf, who Williams asserts was a "workaholic," woke up at 5:00 a.m. each day to work on the text. He wrote his notes for the text in shorthand. His wife Ruth transcribed and typed them during the day while he was working at the university, where, in addition to his teaching and official duties, he oversaw the preparation of the dissections for his text by his assistants and graduate students in the institute. Williams, "The History of Eduard Pernkopf's," 5.

[98] Walter Carl Hartwig, "Pernkopf Anatomy: Atlas of Topographic and Applied Human Anatomy. Vol. I: Head and Neck," *Clinical Anatomy* 4 (1991): 63.

[99] Eduard Pernkopf, *Topographische Anatomie des Menschen: Lehrbuch und Atlas der regionär-stratigraphischen Präparation. I. Band: Allgemeines, Brust, und Brustgliedmaße, Erste und Zweite Hälfte* (Wien: Urban & Schwarzenberg, 1937).

[100] Eduard Pernkopf, *Topographische Anatomie des Menschen Lehrbuch und Atlas der regionär-stratigraphischen Präparation: II. Band: Bauch, Becken und Beckengliedmaße, Erste und Zweite Hälfte* (Wien: Urban & Schwarzenberg, 1941).

two books in 1941. A single-book Volume III: *Der Hals,*[101] followed in 1952. Pernkopf did not live to see the production of the final volume of his anatomy atlas. The first half of Volume IV: *Topographische und stratigraphische Anatomie des Kopfes* was completed by Werner Platzer and published in 1957,[102] and the second half followed in 1960.[103]

The Pernkopf Anatomy text is also significant within anatomical history because it was one of the first major anatomical works to use the revolutionary four-colour photographic printing process. Not only were the images produced for the Pernkopf text of exceptional quality, but the use of the four-colour photographic printing process allowed the images to be reproduced with great faithfulness to the artists' original work. The new printing process also allowed for the use of watercolour as a medium. Most of the illustrations in other anatomical texts were based on drawings that were then transferred on to wood-blocks, metal, or stone. The four-colour photographic process did not require that shading be represented by tiny carved or incised lines, but allowed for colour variations and shading that were impossible in other mediums.

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[101] Eduard Pernkopf, *Topographische Anatomie des Menschen: Lehrbuch und Atlas der regionär-stratigraphischen Präparation. III. Band: Der Hals* (Wien: Urban & Schwarzenberg, 1952).

[102] Eduard Pernkopf, *Topographische Anatomie des Menschen: Lehrbuch und Atlas der regionär-stratigraphischen Präparation. IV. Band: Topographische und stratigraphische Anatomie des Kopfes* (München: Urban & Schwarzenberg, 1957).

[103] Eduard Pernkopf, *Topographische Anatomie des Menschen: Lehrbuch und Atlas der regionär-stratigraphischen Präparation. IV. Band: Topographische und stratigraphische Anatomie des Kopfes* (München: Urban & Schwarzenberg, 1960).

While the scope of the project is impressive within the anatomical tradition, it is not unparalleled. The real distinguishing factor of the Pernkopf text is the scope in combination with the high quality and reproduction of the images in the text.

SIGNIFICANCE OF THE TEXT

Eduard Pernkopf's *Topographische Anatomie des Menschen* marks both the end and the beginning of certain trends in anatomical tradition. It marked the end of the dominance of the "Viennese" anatomical style. Roberts and Tomlinson assert that "it was the Atlas of Eduard Pernkopf (1888-1955) which brought this type of anatomy to a sort of culmination."[104] It marked the beginning of the large scale use of colour photographic printing techniques. The new photographic colour processes which facilitated the reproduction of anatomical illustrations, however, also allowed for photographs of actual dissections, and so in some ways the text concurrently marked the end of hand-illustrated, large-scale, multi-volume anatomical texts.

The practice of topographical human anatomy waned considerably in the post-war period. As Edward J. Heuth, one of the text's 1964 reviewers, advised his readers, the "prediction that the time given to the teaching of gross anatomy in medical schools will rapidly wither in the face of the flowering of physiology and biochemistry is hardly a rash guess." While Heuth's prediction has come true, anatomy continues to play a vital role in the basic training of physicians. Current anatomical texts follow more in the tradition of *Gray's Anatomy's*[105] more diagrammatic style; however, the Pernkopf anatomy text has made a place for itself in anatomical history. While it is impossible to quantitatively measure the significance of the Pernkopf anatomy atlas to the history of anatomy, there are a number of indicators of the text's importance.

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[104] Roberts and Tomlinson, *The Fabric of the Body, 593.*

[105] Henry Gray, *Gray's Anatomy: the anatomical basis of clinical practice*, 39th edition, ed. Susan Standring et al. (Edinburgh: Elsevier Churchill Livingstone, 2005).

Reviews

The reviews of the multiple English editions of the text between 1964 and 1990 have been universally positive. A 1964 review of the first English edition of the atlas praised it, asserting "this German atlas is undoubtedly the most brilliant presentation of regional dissections yet produced."[106] Alan M. Nahum, a reviewer of the second edition stated "This magnificent volume will be to the physician what the volumes of 'coffee table' art reproductions are to the art connoisseur—an indispensable companion and guide to both the art and science of head and neck anatomy…Whether you will want this volume is simply beyond question."[107]

In a later review of the 1989 edition Malcolm H. Hast described the text as a "classic among atlases of anatomy,"[108] and affirmed that "for all those who have an interest in and an appreciation of anatomic medical illustration, and the wherewithal to afford it, this atlas is one of the best."[109] In another review of the 1989 English edition of the text Richard S. Snell praised the text, stating "this outstanding book should be of great value to anatomists and surgeons. It is in a class of its own and will continue to be valued."[110] Oscar M. Guillamondegui agreed that "this volume should be kept handy by all head and neck surgeons for daily reading, and as a working companion," and, appreciating the atlas's "beautiful anatomical plates," advised his readers to "avoid the temptation of keeping it in a display case, as a protected 'objet d'art.'"[111]

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[106] Huth, "Review of *The Atlas of Topographical and Applied Human Anatomy*," 606.

[107] Nahum, "Atlas of Topographical and Applied Human Anatomy," 526.

[108] Hast, "Anatomy Head and Neck," 2115.

[109] Hast, "Anatomy Head and Neck," 2116.

Printing, Distribution, and Use

Moreover, the text has been extremely popular, both within German-speaking countries and abroad. One indication of the text's popularity is the multiple printings, including several editions in a variety of languages. Werner Platzer, the editor of the third 1989 edition of the text, said that:

> The goal of Anatomy is to make available for the future physician the clearest and most accurate illustrations of the different regions of the body since thorough knowledge of morphology provides for an earlier understanding of functional relationships. The practicing physician may also avail himself of an atlas for the recall of anatomical details.
>
> The work of Eduard Pernkopf is classical among atlases of Anatomy. The detailed information on topographic-anatomical relationships and the high quality of the illustrations determine the worth of this volume since the publication of the first edition over forty years ago.[112]

Indeed the second edition's editor Helmut Ferner noted that the first edition, which appeared in German, English, Italian, and Japanese, was "received with great enthusiasm because of its high quality from scientific and technical viewpoints."[113] The text was subsequently translated into several additional languages. The aforementioned review of the text by Richard Snell also highlights this point. He noted that "the publication of this third edition of the *Pernkopf Anatomy* testifies to the success that this classic atlas has met with among anatomists throughout the world."[114]

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[110] Snell, "Pernkopf Anatomy: Atlas of Topographic and Applied Human Anatomy," 205.

[111] Oscar M. Guillamondegui, "Pernkopf Anatomy: Atlas of Topographic and Applied Human Anatomy, 3rd Edition," *Head and Neck* (1990): 189.

[112] Werner Platzer, "Preface," Eduard Pernkopf, *Atlas of Topographical and Applied Human Anatomy, Volume I: Head and Neck.* Ed. Werner Platzer, 3rd Revised Edition. (Baltimore: Urban & Schwarzenberg, 1989), iii.

[113] Helmut Ferner, "Preface," in Eduard Pernkopf, *Atlas of Topographical and Applied Human Anatomy: Volume I: Head and Neck.* 2nd Revised Edition. ed. Helmut Ferner (Baltimore: Urban & Schwarzenberg, 1980), iii.

Another indication of the popularity of the text is its citation in medical and scientific journals. Peter Malina recognizes that the medical world still refers to the text and notes that

> Between 1974 and 1997, it was repeatedly quoted in medical literature – albeit with a decreasing tendency, but still with an average of 15-20 mentions per year. Most of these references concerned the revised 1963/1964 editions and the 1980 edition. However, it is remarkable that the older 1941/43 and 1952 and the 1957 edition are still quoted in the literature.[115]

Although the citations have waned since the controversy surrounding the text began in the mid-1990's, the Pernkopf anatomy text continues to be cited in medical literature. For example in 2003 the text was cited in an article in *Anatomical Science International*[116] and the 1964 edition of the Pernkopf text was cited as recently as April 2007 in an article in *Clinical Anatomy*.[117]

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[114] Snell, "Pernkopf Anatomy: Atlas of Topographic and Applied Human Anatomy," 205.

[115] Peter Malina, "Eduard Pernkopf's Atlas of Anatomy or: the Fiction of 'Pure Science,'" *Wiener Klinische Wochenshrift* 110, no.4-5 (1998): 195.

[116] Mitsuharu Tamakawa, et al. "Fascial Structures and Autonomic Nerves in the Female Pelvis: A Study Using Macroscopic Slices and their Corresponding Histology," *Anatomical Science International* 78, (2003): 228-242.

[117] R. Shane Tubbs, et al., "The Basilar Venous Plexus," *Clinical Anatomy* 20, (2007):1-5 (early view).

Additional indications of the significance of the Pernkopf anatomy atlas are the many thousands of copies of the text that have been and continue to be used by the medical community. The text in its many forms is held at hundreds of research intensive universities around the world. For example the 1963-1964 first English edition of the text is held at university libraries in all fifty states in the United States of America, including thirty-one university libraries in New York State alone.[118]

Reputation of Illustrations

The text and its illustrations also continue to be highly regarded for their scientific accuracy and beauty. The nearly nine hundred watercolour illustrations produced for the various editions of the book are said to be unparalleled, with some going as far as to call the text "the culmination" of the Viennese anatomical style.[119] In 1990, more than fifty years after the first printing of the book, the illustrations were lauded in the *Journal of the American Medical Association* as "truly works of art, demonstrating their clarity and precision, the best in collaboration between master medical artists and skillful anatomic prosecutors"[120] (see figure 1).

An additional indication of the importance of the illustrations from the Pernkopf anatomy text is their mention in one of the only overviews of European anatomical illustration, Roberts and Tomlinson's *Fabric of the Body: European Traditions of*

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[118] This information was derived from a WorldCat database search conducted on September 4, 2006.

[119] Roberts and Tomlinson, *The Fabric of the Body*, 593.

[120] Hast, "Anatomy Head and Neck," 2115.

Anatomical Illustration.[121] Although the *Fabric of the Body* is an overview of the entirety of the European anatomical tradition, and mentions numerous anatomical texts, a reviewer specifically mentions the Pernkopf anatomy text, stating:

> Anatomic and medical art underwent a second flowering in the late 19th and 20th centuries, until now practically unrecorded, in works such as the atlases of Spalteholz, Sobotta, Pernkopf, and Grant, and in the individual talents of such artists as Frank Netter[122] and Max Brödel. It is gratifying to see these contributions assigned their appropriate place in the long line of development.[123]

Another indication of the importance of the illustrations from the Pernkopf anatomy atlas is their use in later anatomical texts, such as the popular first year medical textbook *Gross Anatomy and the Practice of Medicine*.[124] The text uses a number of images from the Pernkopf text, including several of Ludwig Schrott jr.'s knee joints,[125] numerous paintings by Erich Leiper, including his median section of the head and neck,[126] and various paintings by Franz Batke, including his lateral view of the major veins, superficial lymph nodes, and lymphatic vessels of the lower head, face and neck.[127]

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[121] Roberts and Tomlinson, *The Fabric of the Body*, 584.

[122] A later Pernkopf illustrator

[123] John Cody, "Anatomic Illustration: The Fabric of the Body: European Traditions of Anatomical Illustration," *Journal of the American Medical Association* 269, no. 3 (1993): 416.

[124] The authors thank Urban and Schwarzenberg for the use of the Pernkopf images in the acknowledgements of the text. "The author and publisher acknowledge with thanks the considerable use of illustrations from three Urban & Schwarzenberg publications, specifically, Clemente's Anatomy, 3rd edition (1987), Hall-Cragg's Anatomy, 2nd edition (1990), and Pernkopf's Anatomy, 3rd Edition (1989)." Frank J. Salby, Susan K. McCune, and Robert W. Summers, *Gross Anatomy and the Practice of Medicine* (Philidelphia: Lea & Febiger), xi.

[125] Ludwig Schrott Jr. "Fig. 13-4: Anterior View of the right knee joint, opened from the front to expose the ligaments and menisci." Salby, McCune, and Summers, *Gross Anatomy and the Practice of Medicine,* 218.

The book review for *Gross Anatomy and the Practice of Medicine* in the Journal of the American Medical Association called the text:

> a beautiful book of nearly 700 pages with more than 260 black and white illustrations, and more than 200 full colour ones, which were borrowed from other books of anatomy…The book gives us the aroma of Clemente, the beauty of Hall-Craig, and the solid appeal of Pernkopf, plus detailed clinical cases that are well oriented anatomically.[128]

The Pernkopf anatomy text is significant to the European anatomical tradition as a result of the text's exceptional illustrations that were created as a result of the close working relationship between talented artists and anatomist; the innovative use of the four-colour photographic printing process, which allowed the artists' colour illustrations to be re-printed with unprecedented accuracy; and the scope of the project, (covering all macroscopic areas of the human body, over seven books; with nearly one-thousand illustrations - most in colour - the creation of the *Pernkopf Atlas* was a monumental feat). The quality and significance of the text are evidenced by the numerous positive book reviews of the text, its long-term popularity, and the use of the illustrations in later medical works. The significance of the text, however, contributed to the delay in its reevaluation. Williams has argued that the Pernkopf atlas was "frequently misunderstood because of the time in which it was produced,"[129] but for the first 40 years of its existence the text's high quality overshadowed the questions surrounding its creation.

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[126] Erich Leiper "Fig. 32-1: Median section of the Head and neck." Salby, McCune, and Summers, *Gross Anatomy and the Practice of Medicine,* 656.

[127] Franz Batke, "Fig. 27-18: Lateral view of the major veins, superficial lymph nodes, and lymphatic vessels of the lower head, face and neck," Salby, McCune, and Summers, *Gross Anatomy and the Practice of Medicine,* 569.

[128] John E. Skandalakis, "Anatomy: Gross Anatomy and the Practice of Medicine," *Journal of the American Medical Association* 272, no. 12 (1994): 982-983.

PROBLEMS WITH PERNKOPF WITHIN THE ANATOMICAL TRADITION

The Pernkopf text is significant to the history of European anatomy, but it is also problematic. The most controversial issue with the text in the anatomical context remains the origin of the bodies Pernkopf used to illustrate his anatomical atlas. In order to prepare the dissections for his atlas, Pernkopf was provided an abundant supply of cadavers by the university. In contrast to earlier anatomists like Albinus, who would have access to one or two cadavers per year,[130] in 1938 Pernkopf was allotted no fewer than 550 cadavers.[131] The numbers fluctuated somewhat during the war years[132] and peaked at approximately 628 bodies.

There are a number of questions surrounding Pernkopf's use of bodies. The results from the University of Vienna Senate Investigation suggest that more than 1377 bodies of executed prisoners were delivered to the Anatomical Institute during the war and it is highly likely that Pernkopf used them to illustrate his text.[133] Much has been made of this fact in the debates surrounding the text. Pernkopf's use of executed prisoners to illustrate his text, however, was not entirely without exception within the anatomical tradition. One of the major problems that plagued anatomists over the centuries was the lack of available bodies for anatomical purposes.

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[129] Williams "The History of Eduard Pernkopf's," 2.

[130] The progress of Albinus' anatomical work was considerably slowed by his limited access to cadavers. In a typical year he was only allotted one or two bodies "and sometimes these were only used for research with the permission of his students." In order to maximize the use of his cadavers, he first froze them, and devised an elaborate system of pulleys, grids, and life models to most accurately create his images. Roberts and Tomlinson, *The Fabric of the Body*, 327.

[131] Daniela Angetter, "Untersuchungen zur Anlieferung und Bestattung der Studienleichen des Anatomischen Instituts 1938-1946," *Senatsprojekt der Universität Wien Untersuchungen zur anatomischen Wissenschaft in Wien: 1938-1945*, ed. Gustav Spann (Wien: University of Vienna, 1998), 67.

[132] In 1938 records indicate that at least 563 bodies were delivered to the University of Vienna's Anatomical Institute, 1939: 685, 1940: 478, 1941: 464, 1942: 628, 1943: 325, 1944: 358, and in 1945: 463. Angetter, "Untersuchungen zur Anlieferung und Bestattung der Studienleichen des Anatomischen Instituts 1938-1946," 67-70.

One example is one of the most renowned anatomical atlases, a milestone in the anatomical tradition, Andreas Vesalius' *Di Humani Corporis Fabrica*.[134] Published in Basel, Switzerland in 1543, Vesalius' seven volume *Fabrica*, was the result of both developments in printing techniques and the advancement of scientific knowledge. The *Fabrica* revolutionized the study of anatomy and was in many ways a product of fortunate timing. It is considered to have both "established with startling suddenness the beginning of modern observational science and research," and to be "one of the most noble and magnificent volumes in the history of printing. In it, illustration, text and typography blend to achieve an unsurpassed work of creative art; the embodiment of the spirit of the Renaissance directed toward the future with new meaning."[135]

Vesalius made great strides in advancing anatomical knowledge of the human form. Prior to the *Fabrica* the majority of western anatomical knowledge was based on the teachings of Greek-born Claudius Galenus of Pergamum (Galen)[136] who gleaned anatomical knowledge from animals, specifically monkeys.[137] Monkeys had long been seen as "exact and expendable replicas of man."[138] Vesalius's *Fabrica* proved this was not the case and was a direct criticism of Galen's teachings.[139] Vesalius' *Fabrica* marked an ideological shift from the ideas of Galen's anatomical practices which advocated dissection, but not of humans.[140] Human dissection did occur in the middle ages, but was limited to a few bodies per year; because internal organs decayed so quickly animals were most often used to illustrate the musculature in earlier anatomical texts. In contrast, *Fabrica* employed human models for its dissection.

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[133] Angetter, "Untersuchungen zur Anlieferung und Bestattung der Studienleichen des Anatomischen Instituts 1938-1946," 70.

[134] Vesalius, *De Humani Corporis Fabrica Libri Septem.*

[135] J.B. deC.M. Saunders and Charles D. O'Malley, *The Anatomical Drawings of Andreas Vesalius: with annotations and translations, a discussion of the plates and their background, authorship and influence, and a biographical sketch of Vesalius* (New York: Bonanza Books, 1982), 9.

Vesalius's knowledge of human anatomy, however, was acquired in a somewhat questionable manner. It was considered immoral to practice dissections during Vesalius' time. Porter argues, however, that Vesalius showed his "anatomical zeal by robbing a wayside gibbet, smuggling the bones back home and reconstructing the skeleton." As he became more familiar with human anatomy he came to the disturbing conclusion that Galen had dissected only animals, and he quickly discovered that animal anatomy was no substitute for human.[141] He then began to challenge Galen in detail, and "in 1539 he acquired a larger supply of cadavers of executed criminals and worked on his great masterpiece, the *De humani corporis fabrica.*[142] What Porter calls an "anatomical zeal" was also technically illegal and, as Vesalius recounts required him to go to great lengths to obtain anatomical specimens:

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[136] Galen's medical writings survive in greater number than any other Greek author, and his treatise *On Anatomical Procedures*, based on lectures he delivered in A.D. 177, was the basis for anatomical practices throughout the middle ages and was influential well into the sixteenth century. Charles Singer, *Galen, On Anatomical Procedures: Translation of the Surviving Books with Introduction and Notes* (Toronto: Oxford University Press, 1956), xiii.

[137] In the ancient world human dissection was not commonly practiced because "respect for the dignity of man, that microcosm of Nature, was too powerful among the Greeks." Roy Porter, *Blood and Guts: A Short History of Medicine* (London: W.W. Norton & Company, 2003), 53.

[138] A. Hyatt Mayor, *Artists and Anatomists* (New York: The Metropolitan Museum of Art, 1984), 12.

[139] Although Belgian-born Vesalius trained at the Paris Faculty of Medicine under Galen's great advocate Jacobus Sylvius, he eventually came to see himself "as a critic who had no compunction about exposing Galen's errors." He came to identify more than 200 faults in Galen's work. Bernhard Schultz, *Art and Anatomy in Renaissance Italy* (Ann Arbor: University of Michigan Research Press, 1985), 23.

[140] Roy Porter, *The Greatest Benefit to Mankind: A Medical History of Humanity*. (London: W.W. Norton & Company, 1997), 74-75.

> While out walking, looking for bones in the place where on the country highways eventually, to the great convenience of students, all those who have been executed are customarily placed, I happened upon a dried cadaver…The bones were entirely bare, held together by the ligaments alone, and only the insertion of the muscles were preserved…with the help of Gemma, I climbed the stake and pulled off the femur from the hip bone. While tugging at the specimen, the scapulae together with the arms and hands also followed, although the fingers of one hand, both patellae and one foot were missing. After I had brought the legs and arms home in secret and successive trips (leaving the head behind with the entire trunk of the body) I allowed myself to be shut out of the city in the evening in order to obtain the thorax which was firmly held by a chain. I was burning with so great a desire…that I was not afraid to snatch in the middle of the night what I so longed for…The next day I transported the bones home piecemeal through another gate of the city…and constructed that skeleton which is preserved at Louvain in the home of my very dear old friend Gisbertus Carbo.[143]

Most histories of anatomy either do not mention the methods Vesalius used to obtain the knowledge that enabled him to question Galen's teachings or dismiss them in light of the masterful work he created. The story, however, illustrates both the persistent problem of the limited supply of bodies for the purposes of dissection and the great lengths that anatomists went to in order to circumvent regulations governing anatomical practices.

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[141] Porter, *The Greatest Benefit to Mankind*, 74-75.

[142] Porter, *The Greatest Benefit to Mankind*, 179.

[143] Andreas Vesalius as quoted in Saunders and O'Malley, *The Anatomical Drawings of Andreas Vesalius*, 14.

Following Vesalius, European anatomy became both more acceptable and spectacular. The seventeenth century marked the beginning of a number of remarkable developments in the anatomical tradition. It was in this period that public dissections became major social events, both at the University of Padua and especially in northern European countries where the cold weather delayed the putrefaction of the cadaver. The centre of European anatomy thus moved north from the Universities of Bologna and Padua in Italy, to Leiden, Amsterdam, and The Hague in Holland. The Netherlands became the epicenter of anatomical activity, where the public anatomy became an annual occasion marking the beginning of winter. The celebrations occurred in three stages over the course of four or five days. The first was the execution of the criminal. [144] The second was the dissection, which took three or four days to complete. The third stage consisted of a special parade and banquet for members of the Physicians' Guild. [145]

In 1593 a *Theatrum Anatomicum* (anatomical theater) was built in Leiden solely for the purpose of public dissections and anatomical lectures. The dissections were open to the pubic and served both a scientific and a moral purpose. Norbert E. Middelkoop notes that at first the "impression of scientific importance was attached to dissecting the mortal remains of sinners. They served to enrich our knowledge of health and life" and enforced the belief that "God resides in even the smallest part of the human body."[146]

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[144] The public dissection was the ultimate public shaming and was reserved primarily for criminals and the insane.

[145] Emily Blair Chewning, *Anatomy Illustrated* (New York: Simon and Shuster, 1979), 42.

This moral sentiment is reflected in the following poem from the period:

> Wrongdoers, harmful to the human race,
> Still serve a purpose in when they are put to death.
> Surgery seeks out good, even from death.
> The speechless skeleton teaches. Even the dead limbs
> Advise us that we must avoid such shame,
> Head, brain, tongue, heart, lung, kidney, bones, finger, hand,
> They all serve to instruct the living.
> Listener, learn from this to discover yourself,
> And while you attend to everything, hold this for certain
> That God's power is hidden in the slightest part.[147]

In Britain, as in continental Europe, only specific individuals were permitted to perform dissections. In 1540, the newly formed Barber Surgeons of England received their charter from King Henry the Eighth. He also granted the group permission to dissect the bodies of four executed criminals per year for the purposes of anatomical study.[148] The anatomists, however, were responsible for transporting the bodies from the gallows to the Barber Surgeons' Hall. They were often met with hostile crowds of relatives of the criminal who had traveled a great distances to prevent the dissection. Dissections compounded criminals' punishments and were seen as the ultimate personal indignity.

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[146] Norbert E. Middelkoop, "Large and Magnificent Paintings, All Pertaining to the Surgeon's Art: The Art Collection of the Amsterdam Surgeons' Guild," in *Rembrandt Under the Scalpel: The Anatomy Lesson of Dr. Nicolaes Tulp Dissected,* eds. Norbert Middelkoop, Petria Noble, and Jørgen Wadum (The Hague: Mauritshuis, 1998), 10.

[147] In 1691 this poem was painted in a slightly altered form on the dome of the new *Theatrum Anatomicum* in Amsterdam. Middelkoop, "Large and Magnificent Paintings," 79.

[148] The charter was granted largely a result of the close relationship between the King and his surgeon, Thomas Vicary (d. 1561), who pushed for reforms to the current system. Vicary produced England's first anatomy text in 1548. Subsequently John Bannister (1533-1610) also published an anatomical work while lecturing for the Barber Surgeons guild. Both works were derivative, yet mark the somewhat unillustrious beginning to the British anatomical tradition. Magee Reginald, "Art Macabre: Resurrections and Anatomists," *Australian and New Zealand Journal of Surgery* 71 (2001) 377-380; Porter, *The Greatest Benefit to Mankind*, 119; and Chewing, *Anatomy Illustrated*, 36.

> The majority of the subjects arrived on the table at the end of unedifying stories of crime and punishment. The secular and religious laws that reluctantly sanctioned dissection of human cadavers from the late middle ages to the nineteenth century, generally reserved the violation of dissection for those condemned to die at the hands of an executioner. To be dissected was a punishment pronounced to selected criminals while alive, serving to heap posthumous retribution onto the condemned man.[149]

One of the most well known British visual records depicting this indignity is William Hogarth's Series *The Four Stages of Cruelty.* The final plate *The Reward of Cruelty* depicts convicted criminal Tom Nero's dissection in progress. The gruesome scene illustrates the 'reward' for Nero's cruelty in life, and features a partially disemboweled Nero, having his eyes gouged out, as a throng of onlookers observe the proceedings.[150]

As time went on laws governing dissections were relaxed somewhat and the moral dimension of anatomy was replaced by a quest for scientific knowledge. As the drive for that knowledge increased so did the demand for anatomical specimens. One of the greatest difficulties facing anatomists in Britain was the supply of bodies. Roberts and Tomlinson note that "in Britain and North America, until well into the nineteenth century, there was no legal way to ensure an adequate supply of subjects for the teaching of anatomy."[151]

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[149] Kemp and Wallace, *Spectacular Bodies,* 29.

[150] William Hogarth, The Reward of Cruelty, 1750-51 [engraving], in Kemp and Wallace, *Spectacular Bodies,* 29.

[151] Roberts and Tomlinson. *The Fabric of the Body,* 475.

One result was a booming practice of grave robbing. Although grave robbers had practiced for centuries in Britain the problem reached near epidemic proportions in the early nineteenth-century. New less expensive medical schools flourished and not only did they compete for students with the older institutions, but they also created an unprecedented demand for cadavers. Grave robbers began to take advantage of this "seller's market."[152]

One of the most notorious crimes in medical history marked the murderous culmination of these practices. William Burke and William Hare, two Irish immigrants working in Scotland, discovered the lucrative nature of selling cadavers when one of William Hare's lodgers died in his boarding house.[153] They soon laid plans to further furnish the booming trade through murder. Through a process that involved large amounts of whiskey, and suffocation, they eventually murdered no fewer than sixteen people between the years of 1827 and 1828.[154] They sold the bodies of their victims to the popular anatomist Robert Knox.

Roberts and Tomlinson emphasize that "Burke and Hare carried out their plan in a most inefficient manner, becoming known to the children of the neighborhood, as they trundled body after body in tea-chests up to Surgeons' Square.[155] As a result of their ineptitudes they were nearly caught on several occasions.[156] They were not arrested until after the sixteenth murder.[157] Hare was pardoned in exchange for his testimony against Burke. Burke was eventually hanged for the murders "his body publicly anatomized and flayed, his skin tanned and sold by the strip."[158]Knox left Scotland for London, but, as a result of the Burke and Hare scandal, was unable to find another permanent posting until shortly before his death.[159]

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[152] The arrest of seven London grave robbing gangs in fifteen months between 1830-31 is an indication of just how many must have been operating. Adrian Desmond, *The Politics of Evolution: Morphology, Medicine, and Reform in Radical London* (Chicago: The University of Chicago Press, 1989), 157. For American examples see Michael Sappol, *A Traffic of Dead Bodies : Anatomy and Embodied Social Identity in Nineteenth-Century America* (Princeton: Princeton University Press, 2002).

[153] The deceased lodger owed Hare money. Burke and Hare heard there was demand for corpses and decided to sell the lodger's body to settle his debt. The pair made £7.10, selling the body to an assistant of popular Scottish anatomist Robert Knox. Roberts and Tomlinson. *The Fabric of the Body,* 479.

[154] Desmond, *The Politics of Evolution,* 79-80.

Murder for anatomy was not confined to Burke and Hare. However, the public scandal regarding their activities incited ethical discussions in the legal and medical communities of Europe. One significant effect of the Burke and Hare murders was that attention was focused on the predicament that medical profession found itself in: "there were regulations by medical authorities that students should know the anatomy of the human body, knowledge only obtained by dissection. But sufficient subjects for dissection could not be legally obtained."[160] Thus, one indirect result of the Burke and

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[155] Roberts and Tomlinson, *The Fabric of the Body,* 481.

[156] For example their second victim, Mary Paterson, was recognized by one of Knox's students.

[157] There are conflicting accounts as to how the pair were caught, for example Roberts and Tomlinson contend the pair were discovered when a neighbor, suspecting foul play, alerted the authorities before the pair had the opportunity to sell the body. Reginald conversely sites the discovery of the final corpse in Knox's dissecting room as the impetus for the arrest of Burke and Hare.

[158] Porter, *The Greatest Benefit to Mankind,* 317.

[159] Desmond, *The Politics of Evolution,* 424.

[160] Roberts and Tomlinson. *The Fabric of the Body,* 483.

Hare murders was the passing of the Anatomy Act of 1832 which allowed for the bodies of those not claimed by relatives to be legally used for anatomical purposes. While the act did not solve all of the problems relating to the supply of anatomical specimens for dissection, it did provide another legal channel for anatomists and surgeons to obtain bodies.

In contrast to Britain and other parts of Europe Austrian anatomists had relatively easy access to cadavers for dissection. Indeed, this was one of the factors contributing to the long-term success of Austrian anatomy and was in large part due to its longstanding progressive laws governing the use of cadavers for anatomical purposes. For example, anatomical dissection was permissible in Austria more than one hundred and thirty years before it was legal in Britain. As Angetter notes, as early as 1401 it was common practice to use the bodies of executed prisoners for anatomical dissections.[161] In 1742, under Empress Maria Theresia, bodies of those who died in hospital and were unable to pay for their burials were also donated to anatomical institutions.[162] This practice decreased anatomists' reliance on executed prisoners and began to change the way people thought about anatomical science.

Maria Theresia's sons Emperor Joseph II and his brother Grand Duke Pietro Leopoldo of Tuscany also contributed to the anatomical tradition in Austria and Italy respectively though their patronage of large scale wax anatomical collections in the late

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[161] Angetter, "Anatomical Science at the University of Vienna," 1454.

[162] Paul Uiblein, "Beziehungen der Wiener Medizin zur Universität Padua im Mittelalter." *Römische historische Mitteilungen* 23 (1981): 271-286; and Joseph Hyrtl, *Vergangheit und Gegenwart des Museums für menschliche Anatomie an der Wiener Universität* (Wien, 1868), vi.

1700s. The Viennese wax collection was produced as a result of Emperor Joseph II's vacation to Italy to visit his brother Grand Duke Leopoldo who had recently commissioned the anatomical museum *La Specola.* The museum featured remarkably life-like wax anatomical models of the human body,[163] and resulted from the Duke's "antipathy to the use of cadavers in anatomical teaching, and hoped to obviate this necessity by providing, detailed, true to life models."[164]

Upon seeing the models, Emperor Joseph II immediately commissioned a similar collection for his *Military Medical Academy of Surgery*. The doors of Emperor Joseph II's *Medicinisch-Chirurgischen Josephs-Akademie* opened on November 7, 1785. The Academy, attached to a 1200-bed garrison hospital, was conceived of following the war of 1778[165] to "improve both the status and skills of army surgeons who did not have medical degrees and were only organized into craftsmen's guilds."[166] The wax model collection would enable the Academy "to offer the future military surgeons the best possible anatomical teaching."[167]

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[163] Wolfgang Regal and Michael Nanut, *Medizin im historischen Wien: Von Anatomen bis zu Zahnbrechern* (Wien: Springer-Verlag, 2005), 13.

[164] Roberts and Tomlinson, *The Fabric of the Body,* 386-387. There is some debate as to the exact purpose of the anatomical collections of La Specola and the Josephinum. For a discussion of these issues see Anna Maerker, "Uses and Publics of the Anatomical Model Collections of La Specola, Florence, and the Josephinum, Vienna, around 1800," in Marco Beretta ed. *From Private to Public, Natural Collections and Museums* (Nantucket: Science History Publications, 2005), 81-96.

[165] W.R. Wilde, *Austria: Its Literary, Scientific and Medical Institutions with notes upon the present state of science and a guide to the hospitals and sanatory establishments of Vienna* (Dublin: William Curry, Jun. and Company, 1843), 243.

[166] Regal and Nanut, *Medizin im historischen Wien*, 12.

Although the Viennese anatomical tradition is long and varied, it should notnecessarily be used to normalize the actions of Eduard Pernkopf or the issues associated with the text. When presenting the results of the University of Vienna Senate Investigation, which proved conclusively that Eduard Pernkopf used executed political prisoners in his anatomy lectures and that executed prisoners were almost certainly used to illustrate the Pernkopf Atlas,[168] Dr. Angela Angetter essentially dismissed Pernkopf's actions by insisting that "since the introduction of anatomical dissection in Vienna in 1404 it was common practice to use the bodies of executed prisoners – indeed until 1742 it was the sole source of corpses for dissection purposes."[169]

Within the context of the history of anatomy and medicine, Pernkopf's use of large numbers of executed political prisoners, while not without historical analogies, remains somewhat problematic. In most European countries, including Austria, the use of the death penalty had waned considerably by the 19th century.[170] Anatomists increasingly relied on those who bequeathed their bodies to science, those who could not afford a burial, and those cared for by the state.

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[167] Regal and Nanut, *Medizin im historischen Wien*, 12. The resulting collection was comprised of 1192 wax models, at a cost of 30,000 florins. The collection was a great success. It not only influenced future surgeons as Emperor Joseph II had hoped; it also became a tourist attraction. That the academy became a tourist attraction is confirmed by what Dublin physician W.R. Wilde write in 1843. Following a visit, he wrote that: The Josephinium Anatomical Museum has long been considered an object of popular and scientific interest to the visitor; -it is thrown open to the public every Thursday, and amply repays the time spent in its examination. (Wilde includes a footnote here where he writes "for the honor of Vienna, I rejoice to say, that females are not admitted to the museum." He goes on to extol the virtues of Austrian "public decency.") It consists of fifteen handsome rooms, chiefly occupied by wax models of the human body, the size of nature numbering several hundreds. The great majority of these are the production of the chevaliers Tortona and Mascagni, the celebrated artists of Florence. W.R. Wilde, *Austria and its Institutions,* 267.

[168] Gustav Spann, *Results of the Senate Project of the University of Vienna: Investigations of Anatomical Science at the Vienna 1938 – 1945* (University of Vienna, 1998), 5.

[169] Angetter, "Anatomical Science at the University of Vienna 1938-1945," 1454.

Laws, like the British Anatomy Act of 1832,[171] created in reaction to a growing black market in cadavers, reflected not only the need for more sources of cadavers, but also the changing attitudes towards the use of executed criminals.

Angetter argues that the previous widespread use of executed prisoners in Austria facilitated the legalization of their use following the Anschluss; however, the use of executed prisoners was not common practice in the 20th century, and Vienna, in particular, had alternative systems in place since at least 1749. As mentioned, Joseph II's anatomical collection at the Josphinium and the original collection at *La Specola* were created in part because of "an aversion to the use of cadavers in anatomical teaching."[172]

The use of bodies within anatomical history also contributed to the delay in the reevaluation of the Pernkopf text. Within the history of anatomy many celebrated achievements were created through questionable means (such as illicitly stealing bodies from wayside gibbets). In addition anatomists' longstanding use of executed prisoners makes it easy for some to justify, or excuse, Pernkopf's actions. The majority of the examples cited, however, took place more than 100 years before the creation of the Pernkopf text and were not only out of fashion, but generally illegal at the time.

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[170] Peter P. Lejins, "The Death Penalty Abroad," *Annals of the American Academy of Political and Social Science* 284, no.11 (1952): 137-146.

[171] The Anatomy Act of 1832 allowed for the bodies of those not claimed by relatives to be legally used for anatomical purposes. While the act did not solve all of the problems relating to the supply of anatomical specimens for dissection, it did provide another legal channel for anatomists and surgeons to obtain bodies.

[172] Roberts and Tomlinson, *The Fabric of the Body,* 386-387.

While the argument can be made that within the history of anatomy Pernkopf was simply an opportunist who benefited from an unfortunate political situation, it must be noted that it is impossible to completely separate Pernkopf's politics, the era of genocide in which he created his text from his work, and the ethically problematic and politically charged issues surrounding the origin of the bodies used to illustrate the Pernkopf anatomy text.

Particularly given its significance to the tradition, contextualizing the Pernkopf anatomy text within the history of anatomy can normalize both the text's creator and the methods used to craft it. The next chapters, however, will demonstrate that although Pernkopf's actions within the history of anatomy and medical practice may not be entirely exceptional, his actions within the contexts of law, medicine, and politics during the Second World War are extremely problematic. They will illustrate the ways in which Pernkopf was implicated in the ideological and political systems that provided him with his cadavers and will problematize the numerous issues relating to the text. They will also discuss the factors that led the atlas that was once praised as an "outstanding book" "of great value to anatomists and surgeons," and "in a class of its own and will continue to be valued,"[173] to be called "evil"[174] and be repudiated by many in the medical community.

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[173] Snell, "Pernkopf Anatomy: Atlas of Topographic and Applied Human Anatomy," 205.

[174] Franzblau, "Throw Away Evil Atlas," A 24.

CHAPTER II: LEGALIZED AND LEGITIMIZED-MEDICINE, THE LAW, AND PERNKOPF

INTRODUCTION

On November 9, 1946 Brigadier General Telford Taylor delivered the opening statement for the prosecution of the Nuremberg Medical Trial. Throughout the trial Taylor argued that the actions of the Nazi doctors were not only unethical, but scientifically invalid. This argument, however, was difficult to sustain in light of contemporary experimental practices and necessitated the creation of an ethical code with which to judge the accused. Through the trial, the prosecution not only attempted to establish a permanent record of the medical crimes of the Nazi regime, but also sought to make an example of select Nazi medical war criminals and restore some semblance of normalcy to the German-speaking medical profession, all while enabling allied governments to benefit from the medical and scientific knowledge of German and Austrian doctors and scientists.

These multiple purposes, however, were difficult to negotiate, and by not prosecuting, or acknowledging, a greater proportion of medical war criminals the Nuremberg Medical Trial process implicitly legitimized the actions of the unprosecuted Nazi doctors. By the mid 1950's many former Nazi physicians had re-entered the medical profession, data gleaned from Nazi physicians during the war was regularly cited, and medical students around the world were learning from a highly regarded anatomy textbook entitled *Atlas of Topographical and Applied Human Anatomy* by Eduard Pernkopf.

One of the primary factors that led to the delay in the reevaluation of the Pernkopf text was the public's perceptions of the Nazi period. Current popular views of the Nazi period equate war-time German medicine with the Nazi regime. This, however, was not always the case. For decades following the war those tried during the Nuremberg Medical Trial were made separate from the medical community, and the crimes of other Nazi physicians and scientists were not acknowledged. Kristine Moe argues that the long-term denial of the scientific validity of Nazi research that resulted from the trial

> may have become entrenched partly to distance the Nazi doctors from postwar researchers, who argued that the medical profession could regulate itself to ensure good science and good ethics without needing the participation of government or lay people. The Nazi doctors failure to do so was an awkward hole in the argument, so researchers willingly agreed with Taylor that Nazi doctors were simply exceptions, out of the mainstream of science.[175]

Whatever the reasons, one effect of maintaining this view was that it delayed the reevaluation of Nazi scientific material not dealt with during the trial – including the Pernkopf text.

Given the importance of the Nuremberg Medical Trial and the Nuremberg Code to current medical practice one would assume that a great many books would be written on the subject, but this is not the case. With the exception of the official trial records produced by the United States Government Printing Office,[176] and monographs produced by the official German[177] and French[178] trial observers, little secondary research had been conducted on the topic until the early 1990s. George J. Annas and Michael A. Grodin produced one of the first edited volumes that dealt with the trial.[179] In addition, Donald Bloxam's *Genocide on Trial* is useful for discussions of history and memory although does not deal exclusively with the Medical Case.[180] The first contemporary account of the trial from a legal perspective was published in 2004 by Horst H. Freyhofer.[181] One of the most comprehensive monographs on the subject to date was produced by Paul Julian Weindling entitled *Nazi Medicine and the Nuremberg Trials*. The work focuses on the inability of the prosecution to effectively apply the charge of genocide.[182] A consistent theme in each of the aforementioned works is the authors' dismay at the small number of works dedicated to the subject of the Medical Case and the Nuremberg Code.[183]

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[175] Moe used this argument in 1984 to challenge the then popular view that all Nazi science was useless and bring to light the many ways that Nazi data was in fact being utilized by the medical community. Moe "Should Nazi Research Data Be Cited?," 5.

[176] *United States vs. Karl Brandt, et al, in US Adjutant General's Department Trials of War Criminals under Control Council Law no. 10 (October1946-April 1949)*, vol. I-II, *The Medical Case* (Washington: United States Government Printing Office, 1947).

[177] Alexander Mitscherlich and Fred Mielke, *Medizin ohne Menschlichkeit: Medizinische und Eugenische Irrwege unter Diktatur Bürokratie und Krieg* (Heidelberg: Verlag Lambert Schneider, 1949).

In order to explore the factors that led to the delay in the reevaluation of the Pernkopf text this chapter will trace the genesis of the Pernkopf controversy from pre-war

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[178] François Bayle, *Croix gammée contre caducée: Les expériences humaines en Allemagne pendant la Deuxième guerre mondiale* (Neustadt/Palatinat: L'Imprimerie Nationale, 1950).

[179] George J. Annas and Michael A. Grodin *Nazi Doctors and the Nuremberg Code: Human Rights in Human Experimentation* (New York: Oxford University Press, 1992).

[180] Donald Bloxham, *Genocide on Trial: War Crimes Trials and the Formation of Holocaust History and Memory* (Oxford: Oxford University Press, 2001).

[181] Horst H. Freyhofer, *The Nuremberg Medical Trial: The Holocaust and the Origin of the Nuremberg Medical Code* (New York: Peter Lang, 2004).

[182] *Nazi Medicine and the Nuremberg Trials: From Medical War Crimes to Informed Consent*. (New York: Palgrave Macmillan, 2004).

[183] For example Annas and Grodin state that at the time their book was published only two books dealt specifically with the Doctors' Trial. They included the official French and German accounts of the trial. Annas and Grodin, *Nazi Doctors and the Nuremberg Code*, xi.

Germany, through the Nuremberg Medical Trial, to the present. It will discuss the ways in which the trial codified public opinions of Nazi doctors and address the reasons these views were maintained within certain communities. It will argue that within the legal context there were three major factors that contributed to the delay in the reevaluation of the Pernkopf anatomy text.

The first was the small number of medical professionals prosecuted. The trial gave the appearance that all "criminal" Nazi Doctors had been dealt with. As a result, a substantial number of the interned medical doctors and scientists (including Eduard Pernkopf) eventually returned to their respective practices and universities with little to no legal repercussions.

The second factor that contributed to the delay of the Pernkopf anatomy text was the way in which the accused and their crimes were "sensationalized" and othered within the medical profession. The crimes of the accused were horrible; however, as noted, they were not limited exclusively to the defendants of the Nuremberg Doctors' Trial. As Mitscherlich argues, attempts were made in the medical community to isolate the so called "pathological criminals" [184] and assign blame to them alone. This practice, in addition to the decision to include three SS administrators in the trial along with the doctors, further separated the accused and their crimes from legitimate medicine and science and effectively deflected attention away from the actions of other Nazi physicians, including Eduard Pernkopf.

The third factor that led to the delay in the reevaluation of the Pernkopf text was the active suppression and denial of the trial records. In addition to the effect that this had on the careers and personal lives of the official German trial observers Mitscherlich and Mielke, it prevented the realization of the scope and scale of physicians' involvement in the Nazi party and medical crimes for several decades following the war. Only when the period itself was reevaluated was there space for the reevaluation of the Pernkopf anatomy text.

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[184] Mitscherlich and Mielke, *Medizin ohne Menschlichkeit,* 14.

MEDICINE AND MEDICAL ETHICS IN GERMANY

Prior to the Second World War, Germany was a world leader in the spheres of medicine, science, and technology.[185] Politicians developed an early interest in the multiple benefits of scientific research. Medical historian Roy Porter states that German

> [r]ulers looked to an investment in academic science (*Wissenschaft*) as the high road to national prestige and industrial progress. German Universities and their attached specialist scientific institutes blossomed into research centers, whose budgets and staffing levels were the envy of the world. Professors were granted freedom to teach their specialties *(Lehrfreiheit),* while students could tramp from one campus to another *(Lernfreiheit).* All this amounted to a recipe for research unparalleled in France or Britain, where universities were less engines of inquiry than extensions of high school or finishing schools for gentlemen.[186]

Unparalleled in terms of academic freedom, Germany was also the first nation to adopt a national code for ethical research. The Directive of 1900 was issued from the Prussian Minister of Religious, Educational, and Medical Affairs to clinic directors. The directive "limited medical experiments to competent adults who had consented after a 'proper explanation of the adverse consequences that may result.' Experiments had to be conducted or authorized by the director and a record of compliance with the directive had to be noted."[187]

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[185] Although Eduard Pernkopf and his anatomy text are Austrian, it is necessary to first examine German medicine, as the current perceptions of the text are influenced by discourses surrounding Nazi doctors which are most often discussed in the German context. The situation in Austria will be discussed later in this chapter and again in Chapter III.

[186] Porter, *The Greatest Benefit to Mankind*, 322.

In spite of the directive, however, throughout the 1910s and 1920s difficulties persisted in negotiating the safety of the human subject on the one hand and the advancement of medical science on the other. In response to growing public concerns over human experimentation, in February 1931 the German government released new rules governing experimental practices. The Richtlinien of 1931 asserted that, although human experimentation would inevitably continue, certain principles would have to guide the practice. These principles included previous tests on animals, informed consent, and strict restrictions on child experimentation.[188]

The German tradition of scientific and medical excellence continued through the nineteenth and into the twentieth century. Although the Nazi period dismantled many of the social medical programs developed during the Weimar period, academic research practices continued during the Second World War.[189] Historian Robert Proctor stresses the continuities between pre-Nazi and Nazi era medical practice, stating:

> Biomedical science was not, in other words, simply destroyed by the Nazis; the story is more complex. If you go to the New York Academy of Medicine, or Stanford's Lane Library, or any other major medical library, you can find more than 150 German medical journals published continually throughout the Nazi period – more than 100 meters of shelf space of journals! In fact, some 30-odd

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[187] Paul M. McNeil, *The Ethics and Politics of Human Experimentation* (Cambridge: Cambridge University Press, 1993), 40.

[188] McNeil, *The Ethics and Politics of Human Experimentation*, 41.

[189] One example (among many) is advances in trauma surgery, see Thomas Schlich. "Trauma Surgery and Traffic Policy in Germany in the 1930s: A Case Study in the Co-Evolution of Modern Surgery and Society." *Bulletin for the History of Medicine* 90 (2006): 73-94.

> new medical journals begin publication during the Nazi era. Several of them are still published today.[190]

During the Second World War, however, Germany's research practices not only benefited from high levels of funding and staffing, they also benefited from the war itself.

In *Mein Kampf*, Adolf Hitler wrote that "the state is a means to an end. Its end lies in the preservation and advancement of a community of physically and psychically homogeneous creatures." [191] In Nazi Germany, the state pursued brutal policies driven by eugenics and racism in order to achieve Hitler's goal of a homogeneous community. Even prior to the Second World War the aforementioned ethical principles meant to guide medical practice did not apply to those seen by the state as "less than human." Lethal programs, like the T-4 euthanasia program, were developed to relieve the Reich of "useless eaters," through the purposeful starvation and deliberate murder of the mentally and physically handicapped.[192]

In the context of war, these practices were taken to an unprecedented level, and eventually ended in genocide. Between 1939 and 1945, German doctors and scientists, unfettered by ethical restrictions, and bolstered by ideological and political objectives, conducted numerous ethically questionable experiments and medical practices. From the deadly high altitude, seawater, and hypothermia experiments conducted on concentration camps prisoners, to the deliberate murder of Jewish people for a collection of skeletons at the University of Strasbourg, murderous medical practices were permitted under National Socialism as a result of their alleged contribution to the war.

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[190] Robert N. Proctor, "Nazi Doctors, Racial Medicine and Human Experimentation," in *The Nazi Doctors and the Nuremberg Code*, ed. George J. Annas and Michael A. Grodin (New York: Oxford University Press, 1992), 28.

[191] Adolf Hitler, *Mein Kampf* (Boston: Houghton Mifflin Company, 1943), 393.

[192] For German examples see: Michael Burleigh, *Death and Deliverance: 'Euthanasia' in Germany c. 1900-1945* (Cambridge: Cambridge University Press, 1994); or for Austrian examples see: Gabriel Eberhard and Wolfgang NeugeBauer, *NS-Euthanasie in Wien* (Wien: Böhlau Verlag, 2000).

Partially as a result of Germany's pre-war medical reputation, however, in the years directly following the war it was generally accepted that only a small number of doctors in Austria and Germany were "real Nazis," and that only a few of those had committed or contributed to war crimes. This followed theories like the "slippery slope theory," and the "sudden subversion theory." [193] The theories assert that the majority of German doctors were good and that the "new masters materialized overnight, and in an act of rape subjugated German Medicine, which thus became Hitler's first and most immediate victim."[194]

This limited the problems of medicine under National Socialism to a small number of doctors who could be easily removed from the medical system. This "removal" took place in a very public way through the Nuremberg Doctors' Trial, which had the dual purpose of codifying a new set of ethical guidelines for medical practice in addition to identifying and punishing the aforementioned "new masters." The trial effectively purged the medical profession of its tainted past and restored its integrity for the present.

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[193] First proposed by American Nuremberg Trial Observer Dr. Leo Alexander, the slippery slope concept stated that the medical atrocities that were committed during the Second World War had small beginnings (a slight ideological shift) that snowballed out of control. This loaded concept implied a lack of agency on the part of those involved. See: Hartmut M. Hanauske-Abel, "Not A Slippery Slope or Sudden Subversion: German Medicine and National Socialism in 1933," *British Medical Journal* 313, no. 12 (1996):1454.

[194] Hanauske-Abel, "Not A Slippery Slope or Sudden Subversion,"1454.

NUREMBERG DOCTORS' TRIAL

During the later stages of the Second World War public anger grew steadily as intelligence brought news of German war crimes home from the front lines. The Allied leaders, however, disagreed on what should be done with the guilty in the event of an Allied victory.

The idea of trying German war criminals in an international tribunal developed mid-war, partially to prevent a repeat of the events of the attempted trials of Kaiser Wilhelm II and other German officials following the First World War. At the time the United States refused to support the idea and as a result the Kaiser was granted asylum in the Netherlands before any action could be taken against him. The problems with the subsequent prosecutions of the other First World War criminals led many to favor the swift execution of Nazi criminals during the Second World War.[195]

British Prime Minister Winston Churchill, in particular, "felt a powerful animosity towards those he blamed for plunging the world into war. He did not believe that a formal judicial trial would be appropriate for what he termed the 'Hitler Gang,'"[196] and wanted German war criminals, regardless of rank, to be shot within six hours of capture.[197]

Although this suggestion seems rather extreme by today's standards, as Donald Bloxam points out, the Allied leaders were in a difficult position.

> Knowing what we now do of Nazi atrocity in the Second World War, the heated debates of that era on the legitimacy of trying the perpetrators can appear rather

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[195] Stephan Landsman, *Crimes of the Holocaust: The Law Confronts Hard Cases* (Philadelphia: University of Pennsylvania Press, 2005), 2-3.

[196] Richard Overy, *Interrogations: The Nazi Elite in Allied Hands, 1945* (New York: Viking, 2001), 6.

[197] Overy, *Interrogations,* 6.

> unreal. Yet in the years around 1945 a variety of moral and political justifications were required to prevent, on the one hand, mass and summary executions of Germans and their accomplices and, on the other the passage of the majority of the iniquitous back, unnoticed, into ordinary civilian life. The idea of legal redress for state crimes was novel and contentious, and there was no certainty as to whom to try or the precise crimes with which to charge them.[198]

After considerable discussion, however, Winston Churchill, Franklin Delano Roosevelt, and Joseph Stalin agreed that trials to document and punish Nazi misdeeds were a fundamental Allied goal.[199] This decision was reflected in the Declaration of German Atrocities (or the Moscow Declaration) signed by the three leaders on November 1, 1943, which stated that it would hold those who committed crimes during the war accountable for their actions following the war.[200]

The process of establishing the courts took place over several stages. First, the United States, Great Britain, Russia and France executed the London Agreement, on August 8, 1945 which established an International Military Tribunal for the criminal trials. Four months later, on December 20, 1945, Control Law No. 10 - which authorized the arrest and prosecution of suspected war criminals - was issued by the Allied Control Council of Germany.[201] In addition to authorizing the arrest and prosecution of suspected war criminals, Control Law No. 10 also identified and defined criminal charges in article II, which included

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[198] Bloxham, *Genocide on Trial*, vii.

[199] Landsman, *Crimes of the Holocaust,* 1.

[200] "The Declaration of German Atrocities [Moscow Declaration]," November 1, 1943. *United States vs. Karl Brandt, et al, in US Adjutant General's Department Trials of War Criminals under Control Council Law no. 10 (October1946-April 1949)*, vol. I, *The Medical Case* (Washington: United States Government Printing Office, 1947), viii.

[201] George J. Annas, Leonard H. Glantz, and Barbara F. Katz JD, *Informed Consent to Hunan Experimentation: The Subject's Dilemma* (Cambridge: Ballinger Publishing Company, 1977), 7.

a. Crimes against peace
b. War crimes
c. Crimes against humanity
d. Membership in categories of a criminal group or organization declared criminal by the International Military Tribunal.[202]

The eventual issue of Ordinance No. 7 by the military governor of the American Zone established specific Military Tribunals in which to try the war criminals.[203]

Numerous trials were held under Control Law 10 and Ordinance Number 7, but the most influential were the Nuremberg Trials.The Nuremberg Doctors' Trial, officially named the "United States vs. Karl Brant et al." became known as the "Medical Case" because 20 of the 23 defendants were doctors, and the charges related principally to medical experimentation on human beings.[204] The Medical Case was the second case to take place in Nuremberg, and the first of twelve trials of war criminals before the Nuremberg Military Tribunals under Control Council Law No.10. What distinguished the Medical Trial from the International Military Tribunal (IMT) trial of the Nazi elite was that it was managed and implemented almost exclusively by the American Government. Trial expert Paul Weindling asserts that "the first trial of major German war criminals at Nuremberg was an international military tribunal of the four allies, Britain, France,

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[202] Control Council Law No. 10 Punishment of Persons Guilty of War Crimes, Crimes Against Peace and Against Humanity, Berlin 20 December 1945. 317-321.

[203] Annas, Glantz, and Katz, *Informed Consent to Hunan Experimentation*, 7.

[204] "United States vs. Karl Brandt et al," in *US Adjutant General's Department Trials of War Criminals under Control Council Law no. 10 (October1946-April 1949)*, vol. 2, *The Medical Case* (Washington: United States, Government Printing Office, 1947), V.

Russia, and the United States. By contrast the Medical Trial was constituted solely as a United States military tribunal, organized and paid for by the United States."[205]

The Medical Case attracted unprecedented media attention. Advances in print and radio technologies facilitated the transmission of trial information, particularly photographs and testimony concerning the medical experiments. Although medical experimentation had been occurring for centuries for one of the first times in history vivid photographic records of medical experiments were made available to the general public on a large scale. This, in combination with moving survivor testimony, made the unimaginable acts of the accused more tangible and difficult to deny.[206]

Although thousands of medical professionals were interned in Allied prison camps following the war only twenty-three were tried at the Doctors' Trial. The accused comprised "sixteen Nazi doctors, four non-party physicians, and three SS administrators."[207] Only two of the accused were internationally known academics, and three did not have any form of medical training.[208] The defendants were selected not by the scale or scope of their crimes, nor by their seniority in the Nazi party; rather, they were purposefully selected from the ranks of interned medical scientists and administrators based on how "clear cut" and "winnable" their cases were.[209] The calculated selection of the defendants, in combination with the gruesome nature of the crimes of the accused, led the prosecution to believe that the trial would be both "quick" and "decisive," and would set the tone for future trials.[210]

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[205] Paul Weindling, "Human Guinea Pigs and the Ethics of Experimentation: The BMJ's Correspondent at the Nuremberg Medical Trial," *British Medical Journal* 313 (1996): 1467.

[206] See *New York Times*, September 1946 - June 1948.

[207] Paul Julian Weindling, *Nazi Medicine and the Nuremberg Trials: From Medical War Crimes to Informed Consent* (New York: Palgrave Macmillan, 2004), 138

[208] Rudolf Brandt, Wofram Sievers and Viktor Brack.

[209] Weindling, *Nazi Medicine and the Nuremberg Trials,* 138.

The accused gave a face to the many medical professionals who were complicit in medical atrocities during the Second World War, and included: Herman Becker-Freyseng, Wilheim Bieglboeck, Kurt Blome, Viktor Brack, Karl Brandt, Rudolf Brandt, Fritz Fischer, Karl Gebhardt, Karl Genzken, Siegfried Handloser, Waldermar Hoven, Joachim Mrugowsky, Hertha Oberheuser, Adolf Pokorny, Helmut Poppendick, Gerhard Rose, Paul Rostock, Siegfreid Ruff, Oskar Schroeder, Wolfram Sievers, Konrad Schäfer, and Georg August Welz.

The defendants at the Nuremberg Doctors' Trial effectively shouldered the blame for the entirety of Holocaust medical crimes. The small number of individuals charged during the Nuremberg Doctors' Trial, however, was by no means representative of all of the medical professionals who were involved in, conceived of, and executed, medical war crimes during the Nazi era. As Weindling argues, however, "Allied investigators of German military medicine were confronted by the choice of exploiting captured personnel and documents for weapons research, or prosecuting war crimes."[211] The benefits that could be garnered from former German and Austrian Nazi doctors and scientists to advance medical and weaponry goals far outweighed those that could be gained from trying them; yet, there was a need to address the public knowledge and outrage that arose in response to the concentration camps and the medical experiments conducted within them. The Nuremberg Doctors' Trial was an attempt to negotiate the aforementioned tension, but it became essentially a show trial to publicly condemn the "criminal Nazi doctor," while enabling Allied governments to privately benefit from the knowledge and expertise of former Nazi doctors and scientists.

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[210] Weindling, *Nazi Medicine and the Nuremberg Trials,*

[211] Weindling, *Nazi Medicine and the Nuremberg Trials,* 3.

The accused were charged with various counts of the crimes laid out in control law no. 10. The category of war crimes is particularly significant to the Doctors' Trial because the notorious concentration camp experiments and other medical crimes were charged under it. They included

1. The high altitude tests, seawater freezing, and malaria experiments conducted at Dachau
2. The lost gas (mustard gas) experiments, bone muscle and nerve regeneration and bone transplantation experiments conducted at Ravensbrück
3. The epidemic jaundice experiments conducted at the Natzweiler and Sachsenhausen concentration camps
4. The sterilization experiments conducted at Auschwitz and Ravensbrück
5. The spotted fever experiments conducted at Buchenwald and Natzweiler
6. The experiments with poison and incendiary bomb experiments conducted at Buchenwald
7. The murders for the skeleton collection at the Reich University of Strasbourg
8. The murders of alleged tubercular Poles
9. The Euthanasia Program[212]

Brigadier General Telford Taylor, the prosecution's chief council at the Nuremberg Doctors' Trial set the tone for the trial in his opening statement of the prosecution on the 9th of December 1946.

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[212] Joel Levi provides a good summary of the defendants and the charges against them in his article "Medicine, the Holocaust and the Doctors' Trial." In *Bioethical and Ethical issues Surrounding the Trials and the Code of Nuremberg: Nuremberg Revisited,* ed. Jaques J. Rozenberg (Lewiston: The Edwin Mellen Press, 2003), 111-130.

> The defendants in this case are charged with murders, tortures, and other atrocities committed in the name of medical science. The victims of these crimes numbered in the hundreds of thousands…For the most part they are nameless dead. To their murderers, these wretched people were not individuals at all. They came in wholesale lots and were treated worse than animals. They were 200 Jews in good physical condition, 50 Gypsies, 500 Tubercular poles, or 1,000 Russians. The victims of these crimes are numbered among the anonymous millions who met death at the hands of the Nazis and whose fate is a hideous blot on the page of modern history.
>
> It is owed not only to the victims and to the parents and the children of the victims, that just punishment be imposed on the guilty…larger obligations run to the peoples and races on whom the scourge of these crimes was laid. The mere punishment of the defendants, or even of the thousands of others equally guilty, can never redress the terrible injuries which the Nazis visited on these unfortunate peoples. For them it is far more important that these incredible events be established by clear and public proof, so that no one can ever doubt that they were fact and not fable; and that this court as the agent of the United States and as the voice of humanity, stamp these acts, and the ideas which engendered them as barbarous and criminal.[213]

Through photographs, documents, and perpetrator and survivor testimony the details of the crimes were revealed. The accused defended themselves, and argued that, regardless of their actions during war, it was inevitable that people would die, and that it was better that they died in the service of science in order to save other lives in future. The defendants also argued that their actions fell within the bounds of acceptable practice, and prosecutors were faced with the accusation that American research was itself coercive. Telford Taylor noted that:

> Curiously enough, we were educated in large part by our opponents. We had ample opportunity to interrogate, and in the course of interrogating doctors, of whom some were sophisticated and very able physicians we began to realize the kinds of problems we would be up against when presenting the case.[214]

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[213] Telford Taylor, "Opening Statement of The Prosecution December 9, 1946," in *US Adjutant General's Department Trials of War Criminals under Control Council Law no. 10 (October1946-April 1949)*, vol. I, *The Medical Case* (Washington: United States, Government Printing Office, 1947), 27.

[214] Telford Taylor, "Biomedical Ethics" Hastings Center, as quoted in Paul Julian Weindling, *Nazi Medicine and the Nuremberg Trials: From Medical War Crimes to Informed Consent* (New York: Palgrave Macmillan, 2004), 266.

Taylor specifically referred to Dr. Gerhard Rose, the Chief of the Department for Tropical Medicine and Professor at the Robert Koch institute, who raised issues about the ethics of American research, in particular the malaria experiments conducted on inmates of penal institutes and asylums in the United States.[215]

Weindling argues that "the prosecution rapidly realized that it would have to contrast ethical and non ethical procedures for human experimentation," and subsequently attempted to "elicit a collective reaction from the leaders of American medicine."[216] The American medical community, however, did not react in the way Taylor had hoped. Ethically problematic medical experimentation had occurred in the United States, and leaders in the American medical community and the prosecution "feared that Nuremberg would turn into a trial of American medicine unless a more sophisticated strategy was pursued other than that of the condemnation of human experiments as war crimes and murder."[217]

The resulting strategy was the creation of a 'universal' code of ethics with which to judge the accused. It was formed with the help of two American expert witnesses at the trial, Leo Alexander and Andrew Ivy, who, with the approval of the *American Medical Association* (AMA), articulated three basic ethical tenants based on the previous German ethical codes. They were previous animal experiments to determine risk, informed consent, and responsible and qualified medical supervision. Schuster asserts that "during cross examination, Ivy acknowledged that there were no written principles of research in the United States or elsewhere before December 1946 and that the principles adopted by the American Medical Association were expressly formulated for the Doctors' Trial."[218]

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[215] Evelyn Schuster, "Fifty Years Later: The Significance of the Nuremberg Code," *The New England Journal of Medicine* 337, no. 20 (1997):1438. For additional American examples see Susan E. Lederer, *Subjected to Science: Human Experimentation in America Before the Second World War* (Baltimore: Johns Hopkins University Press, 1995).

[216] Weindling, *Nazi Medicine and the Nuremberg Trials,* 266.

[217] Weindling, *Nazi Medicine and the Nuremberg Trials,* 269.

The resulting code, meant to articulate the most basic standard of medical ethics, emphasized the need for informed consent for experimental subjects, and echoed the Hippocratic Oath's "do no harm" (*primo non nocare*) principle.[219] The code also spared the United States from evaluating its past, as it became the ultimate legal reference point during the trial, and superseded German arguments against the United States and 'acceptable' practice.

Largely as a result of the defense's strategy, the Nuremberg Medical Trial was neither quick nor decisive. Following the original indictment and arraignment of the defendants, the Tribunal for the Doctors' Trial convened 139 times. The final judgments were delivered more than eight months after the opening statement on August 19, 1947, by which time 85 witnesses had been heard, 1471 documents reviewed, and 11,538 pages of transcript written.[220]

The verdict was delivered in two parts. The first concerned the fates of those accused. Of the twenty-three tried, Karl Brandt, Karl Gebhardt, Joachim Mrugowsky, Rudolf Brandt, Wolfram Sievers and Viktor Brack and Waldermar Hoven, were found guilty and sentenced to death by hanging. Siegfried Handloser, Oskar Schroeder, Karl Genzken, Gerhard Rose, and Fritz Fischer were sentenced to life imprisonment. Wilheim Bieglboeck was sentenced to fifteen years in prison, and Helmut Poppendick ten. Paul Rostock, Kurt Blome, Siegfreid Ruff, Georg August Welz, Konrad Schäfer, and Adolf Pokorny, were found not guilty and all charges against them were dismissed.[221]

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[218] Schuster, "Fifty Years Later: The Significance of the Nuremberg Code," 1439.

[219] Schuster, "Fifty Years Later: The Significance of the Nuremberg Code," 1436.

[220] Annas and Grodin, "Introduction," 4.

The Nuremberg Code comprised the second half of the final judgment delivered on August 19, 1947. Prior to the war medical practice was largely self regulating; however, as noted above, the medical atrocities committed during the Second World War demonstrated a palpable need for a concrete set of international regulations to guide medical practice.

The Nuremberg Medical Trial and convictions, however, were criticized for being both too lenient, for not pressing the issues relating to genocide, and too severe for not hearing the appeals of the accused. It was also accused of being too American and not representing a truly international tribunal. The Nuremberg Code itself also received criticism. Many in the medical research community thought that it was too restrictive and that the small number of doctors and lawyers who created it did not understand medical science adequately enough to create an ethical code to guide medical practice. Alexander and Ivy, in particular, were criticized for basing their recommendations on ethical ideals, rather than contemporary research practices.

In other nations the Nuremberg Code was also seen as a way to restrain select "German Barbarians from practicing inhumane Medicine, but was deemed unnecessary for physicians elsewhere."[222] As a result of this bias, and lack of means of enforcement, the code was not universally followed, and necessitated the creation of additional codes in order to regulate medical practices.[223]

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[221] Alexander Mitscherlich and Fred Mielke, *Medizin ohne Menschlichkeit: Medizinische und eugenische Irrwege unter Diktatur Bürokratie und Krieg* (Heidleberg: Verlag Lambert Schneider, 1949).

Finally, if the primary objectives of the trial were to "document Nazi misdeeds"[224] and have "these incredible events be established by clear and public proof, so that no one can ever doubt that they were fact and not fable,"[225] then the trials failed in the immediate post-war period. The collective amnesia on the part of both the Germans and Americans, brought on in part by the Cold War, relegated the crimes of Nazi doctors to a dusty corner of history.

Within Germany, the trial and the resulting code was seen as "an instrument to purge the medical profession of a small group of supposedly atypical physicians whose ethical principals of 'doing no harm' had been depraved by the doctrines of National Socialism."[226] By 1948, the West German Medical Chambers (*Westdeutschen Ärztekammern*), a monopoly organization that required the membership of every German doctor, and "exercises immense regulatory and oversight functions,"[227] alleged that "only a small portion of German Physicians committed such crimes, and apart from the patently Nazi Blome[228] – none of the physicians tried at Nuremberg had any involvement with German professional organizations. Thus the medical profession had no knowledge of the crimes, nor any means of preventing them."[229] Historians Lerner and Rothman affirm that "after the trial, the German medical establishment carefully cultivated the theory that the violations that had occurred were the act of this handful of physicians working in a few notorious concentration camps."[230]

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[222] Horst H. Freyhofer, *The Nuremberg Medical Trial: The Holocaust and the Origin of the Nuremberg Medical Code* (New York: Peter Lang, 2004), 10.

[223] Such as the declaration of Helsinki I-IV. See Evelyne Schuster, "The Nuremberg Code: Hippocratic Ethics and Human Rights," *The Lancet* 351 (1998): 976.

[224] Landsman, *Crimes of the Holocaust,* 1.

[225] Telford Taylor, "Opening Statement of The Prosecution December 9, 1946," in *Nazi Doctors and the Nuremberg Code: Human Rights in Human Experimentation,* Eds. George J. Annas and Michael A. Grodin (NewYork, Oxford University Press, 1992), 67.

[226] Freyhofer, *The Nuremberg Medical Trial,* 10.

[227] Hanauske-Abel, "Not a Slippery Slope or Sudden Subversion," 1454.

The German Chamber of Physicians continued to uphold this view for decades following the war and, according to some, found ways to ensure that other physicians did the same.[231] The Chamber insisted that of the 90,000 doctors only 350 were "criminal," and this could be "taken as exonerating the profession on the whole. The Germans ignored the obligation to expel the guilty, and sought to rehabilitate the medical profession internationally…But on the home front they aimed to suppress any discussion of German medical crimes."[232]

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[228] Interestingly Blome was acquitted of all charges – including membership in "criminal organizations" – and eventually worked in the United States.

[229] Weindling, *Nazi Medicine and the Nuremberg Trials,* 326.

[230] Lerner and Rothman, "Medicine and the Holocaust," 793.

[231] For example, after publishing a controversial article on the role of German doctors in National Socialism in the *Lancet* Hartmut M. Hanauske-Abel's license to practice emergency medicine was revoked by the Kassenärztliche Vereinigung (an organization closely related to the Chamber of Physicians), and was restored to him only after a decision by the German supreme court. See: "Conflict of Interest" section of Hanauske-Abel, "Not A Slippery Slope or Sudden Subversion," 1462.

[232] Weindling, *Nazi Medicine and the Nuremberg Trials,* 3.

In effect all of the blame for the medical atrocities committed during the holocaust was placed squarely on the shoulders of a select few physicians. As more details and survivor testimonies emerged, however, the group grew to include figures such as the infamous Joseph Mengele, who conducted horrific experiments on twins in Auschwitz.

Very few Austrian or German doctors were ever identified as "criminal." Those who were, however, were painted in the worst possible light, not as doctors, but as monsters. They were called opportunists and inept scientists who would do anything to advance their respective careers. By providing the details of the medical experiments preformed in the camps, emphasizing the particularly sadistic aspects of the doctors' personalities, and downplaying anything remotely human or professional in the doctors' pasts, the "criminal" Nazi Doctors became detached from the rest of medicine, and continued to be treated as completely "other" in the medical profession, separated from orthodox medicine, both in Austria and Germany, and more generally in the West.

Another effect of maintaining this view was that the majority of Nazi physicians were not prosecuted for their crimes. Nazi doctors after the war occupied high-ranking posts, and the old Nazi guard in power positions, in conjunction with West German Historians, contributed to what historian Michael H. Kater calls "the literary tactics of deletion, manipulation, and distortion of fact."[233]

The Nuremberg Trial and the resulting convictions and ethical code gave the impression that all of the Nazi doctors and their research had been dealt with. With the onset of the Cold War, the United States had a vested interest in publicly maintaining this view. As mentioned earlier, the "allied investigators of German military medicine were confronted by the choice of exploiting captured personnel and documents for weapons research, or prosecuting war crimes."[234] The small number of Nazi doctors and scientists prosecuted for their crimes is an indication of the larger numbers of doctors and scientists who were used to advance military objectives in the post war period.

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[233] See Michael H. Kater, "The Burden of the Past: Problems of a Modern Historiography of Physicians and Medicine in Nazi Germany," *German Studies Review* 10, no.1 (1987): 31-56.

One example is "Project Paperclip,"[235] which, between the years of 1945 and 1955, "employed 765 German and Austrian scientists, engineers, and technicians, in an attempt to exploit their expertise and prevent the remilitarization of post-war Germany."[236] Interestingly, this number included four of the defendants at the Nuremburg doctors' trials: Kurt Blome, Hermann Becker-Freysing, Siegfried Ruff and Konrad Schäfer. Becker-Freysing, Ruff, and Schäfer all worked for the United States Army Air Force prior to the trial. [237] Following the trial Schäfer was brought to the United States to work at Randolf Field in Texas through Project Paperclip. Kurt Blome was also hired to work on "project 63" for the United States Army Chemical Corps.[238]

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[234] Weindling, *Nazi Medicine and the Nuremberg Trials*, 3.

[235] T. Bower, *The Paperclip Conspiracy: The Hunt for Nazi Scientists* (Boston: Little Brown, 1987).

[236] Alexander Mitscherlich and Fred Mielke, "Epilogue: And Seven were Hanged," in *Nazi Doctors and the Nuremberg Code: Human Rights in Human Experimentation* (Oxford: Oxford University Press, 1992), 106.

[237] Mitscherlich and Mielke, "Epilogue: And Seven were Hanged," 106.

[238] Mitscherlich and Mielke, "Epilogue: And Seven were Hanged," 107.

Largely as a result of the publicity of the Nuremberg Doctors' Trial, the American public and a large portion of the medical community regarded Germany as the worst perpetrator of medical atrocities during the Second World War; however, war-time medical atrocities were not exclusively limited to Nazi Doctors. For example the Japanese also preformed horrific medical experiments. Perhaps as a result of lessons learned from the difficulties of the Nuremberg Doctors' Trial, however, few Japanese medical perpetrators were ever brought to trial, and the Japanese experiments were not widely publicized. Although Japanese war-time atrocities rivaled those perpetrated by Germany;[239] many of the doctors and scientists were given immunity by the American government in exchange for information on biological and chemical weapons.[240] One American government document even expressed the hope that the Japanese doctors involved in medical experiments would be "spared embarrassment." Paul MacNeill notes this was "a delicate show of concern considering that they had used humans in lethal experiments and executed any that survived."[241] McNeill also stresses that:

> There is a stark contrast between the Americans' treatment of German and Japanese experimenters. The Germans were tried for war crimes and hanged for being criminally culpable and in breach of a universal standard of ethics. The Japanese were protected by secrecy and allowed to establish themselves as pillars of Japanese society. The only plausible explanation for this difference is political expediency.[242]

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[239] See Peter Williams and David Wallace, *Unit 731: Japan's Secret Biological Warfare in World War II* (New York: Free Press, 1989), and Yuki Tanaka, *Hidden Horrors: Japanese War Crimes in World War II.* (Oxford: Westview Press, 1996).

[240] McNeil, *The Ethics and Politics of Human Experimentation,* 24-25.

[241] McNeil, *The Ethics and Politics of Human Experimentation,* 22-23.

[242] McNeil, *The Ethics and Politics of Human Experimentation,* 26.

By placing blame for the majority of holocaust atrocities on a select few, American doctors also benefited by not having to confront their own ethically problematic practices. Although American physicians helped craft the Nuremberg Code of ethics it was not universally adhered to, and unethical medical experimentation continued for years following the war.

The American Plutonium experiments are one example of American doctors' and scientists' disregard for the Nuremberg Code. The experiments, conducted on at least one thousand men, women and children, studied the effects of various doses of radiation "for experimental rather than therapeutic purposes."[243] Japanese war historian Yuki Tanaka draws parallels between German, Japanese, and American medical crimes, noting that Americans too conducted their share of ethically problematic experiments, specifically citing American Cold War radiation experiments. [244]

In spite of this, it continues to be maintained by many practicing physicians that in light of the German crimes "the record of the United States is on the whole commendable."[245] One need only look to the above examples, or the ways in which African Americans were treated by the medical community in the United States to dispute the belief. The case of the Tuskegee Syphilis Experiment provides another example of racially motivated scientific experiments that, like the Nazi experiments, served not to heal, but rather garner medical data solely for the sake of science.[246] As Jeremiah M. Gelles said, "It is easy to see the manifestations of racism when they are as egregious as the holocaust," but "racism is so institutionalized in the way we 'do business' in the United States that it has become part of the scenery."[247]

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[243] Tanaka, *Hidden Horrors*, 164.

[244] Tanaka writes "in Nashville, Tennessee, 750 pregnant women were given pills that were thirty times more radioactive than background [radiation]. In Oregon, the genitals of 131 prisoners were exposed to large doses of X rays [sic]. In Boston, Massachusetts, 49 intellectually disabled children living in an institution were fed radioactive breakfast cereal for 10 years. In Memphis, Tennessee, 7 newborn babies were injected with radioactive iodine. In San Francisco, 18 terminally ill patients including children were injected with plutonium. Most of those who were experimented on were black or working class whites – the kind of people whose lives some wealthy white doctors might not value very highly. In the context of Cold War, these doctors might have thought it legitimate to risk lives they did not value in order to possibly save the lives of those they did." Tanaka, *Hidden Horrors,* 164. See also Baader, Lederer, Low; and Schwerin, "Pathways to Human Experimentation, 1933-1945: Germany, Japan, and the United States," *Osiris* 20 (2005): 205-231, for a comparative study on Germany, Japan and the United States.

EARLY LITERATURE ON THE NUREMBERG MEDICAL TRIAL

In the years immediatly following the trial very few monographs directly relating to the Medical Case were produced. The few exceptions were written by the official trial observers or expert witnesses and were often highly edited, censored, or not readily available to general audiences.

One example is *Croix gammée contre caducée: Les expériences humaines en Allemagne pendant la Deuxième guerre mondiale*,[248] written by the official French observer of the trial Dr. François Bayle. The monumental work concludes with the sentiment that "monstrous research projects will be developed, similar to those left unfinished by the fall of Germany, and these will be attempted elsewhere. The all-powerful state will take responsibility, and everything will repeat itself."[249]

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[245] Barron H Lerner and David J. Rothman, "Medicine and the Holocaust: Learning More of the Lessons," *Annals of Internal Medicine* 122, no. 10 (1995): 793.

[246] See James H. Jones, *Bad Blood: The Tuskegee Syphilis Experiment* (New York: The Free Press: 1993).

[247] Jeremiah M. Gelles, "Letter to the Editor," in *Annals of Internal Medicine* 123, no. 12 (1995): 164.

[248] François Bayle, *Croix gammée contre caducée: Les expériences humaines en Allemagne pendant la Deuxième guerre mondiale* (Neustadt/Palatinat: L'Imprimerie Nationale, 1950).

By the 1970s, the work was out of print, and it seems that Bayle's grim prophecy was becoming reality in France. Christian Bernadac, a French journalist and the son of a holocaust survivor, noted in the late 1960s that "a veil had been fastidiously drawn over the reports of the trials. The investigators who examined the medical experiments on human subjects in the concentration camps, were all doctors and addressed themselves primarily to the medical profession."[250] In addition, when he met with more than fifty students of the Faculty of Medicine of Paris he

> was surprised to learn that they were not even acquainted with the experiments in the camps, and that nearly half of them would condone human experimentation under certain conditions. Others went so far as to consider such experiments 'obligatory,' if they could lead to saving thousands of lives. After the war, this basic argument was the cornerstone of the defense of the devil's doctors. Now it is coming back to fashion in certain medical circles. [251]

In Germany, accounts of the medical trial were not just forgotten but were actively suppressed and discredited. Such as the case of Alexander Mitscherlich and Fred Mielke. The treatment of their work on the trial provides a striking example of the active denial of information concerning medical war crimes in the postwar period.

Newly appointed university lecturer Alexander Mitscherlich, and his assistant, medical student Fred Mielke, were given the difficult task of collecting evidence, and documenting the Nuremberg Medical Trial by the order of the 51st Assembly of the West

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[249] Bayle, *Croix gammée contre caducée*, 1517.

[250] Christian Bernadac, *The Devil's Doctors: Medical Experiments on Human Subjects in the Concentration Camps* (Paris: France-Empire, 1967), 9-10.

[251] Bernadac, *The Devil's Doctors,* 10.

German Medical Chamber.[252] Although Mitscherlich questioned his qualifications for the position he was strongly encouraged to accept it. The pair eventually produced two documents on the trial. The first, "Das Diktat der Menschenverachtung," was a short pamphlet printed during the trial to help physicians understand the trial proceedings.[253] They subsequently produced a book length account of the trial entitled *Medizin ohne Menschlichkeit: Dokumente des Nüremberger Ärzteprozesses.*[254] The work, essentially a primary source document, contained numerous trial documents and select transcript excerpts, in addition to a brief introduction by the two investigators.

The pair, however, was shocked by the reaction their work provoked in the German Medical community. In addition to summarizing the acts of those accused, the first pamphlet discussed several prominent doctors and scientists named, but not charged, in the Nuremberg Medical Trial. The pamphlet incited anger from within the medical community. As Mitscherlich notes, however, in spite of the concrete evidence against them, not one of the doctors implicated in the documents said "*Es tut mir Leid,*"[255] for their involvement in Hitler's apparatus of war and genocide.

Mitscherlich and Mielke were personally attacked, and accused of inventing information in order to discredit the medical profession. Mitscherlich also recognized early on that attempts were being made in the medical community to isolate the "pathological criminals" and assign blame to them alone.[256]

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[252] Alexander Mitscherlich and Fred Mielke, *Medizin ohne Menschlichkeit: Dokumente des Nüremberger Ärzteprozesses* (Frankfurt am Main: Fischer Bücherei, 1960), 14.

[253] Mitscherlich and Mielke, *Medizin ohne Menschlichkeit,* 14.

[254] Alexander Mitscherlich and Fred Mielke, *Medizin ohne Menschlichkeit: Medizinische und eugenische Irrwege unter Diktatur Bürokratie und Krieg* (Heidelberg: Verlag Lambert Schneider, 1949).

[255] Mitscherlich and Mielke, *Medizin ohne Menschlichkeit,* 14.

As a result of the strong criticism, the pair worried about how their book would be received; however, they eventually completed it and sent the book to the West German Medical Chamber.[257] 10,000 copies of the book were printed in total, and sent to members of the medical community. In contrast to the pamphlet that caused a considerable amount of discussion (and anger), Mitscherlich notes that there was no reaction to the book; it was as though the book did not exist. According to Mitscherlich, the only organization that acknowledged its existence was the World Heath Organization, which, to the dismay of the authors, after reading it came to the conclusion that German physicians were unconnected to the crimes of the dictatorship, and German doctors were subsequently re-admitted to the organization.

The West German Medical Chambers included this preface to the first edition:

> The members of the committee, in particular Privatdozent Dr. Alexander Mitscherlich and Fred Mielke of Heidelberg, deserve the thanks of the profession for the objective, scientific and creditable manner in which they performed their task. It is to be hoped that the result of their labors will contribute to the reinforcement of unblemished humanity and genuine medical rectitude among doctors, to the unswerving maintenance of both written and unwritten laws of the practice of medicine and to irreproachable social and moral behavior by all German doctors in both their public and their private capacities, so that the grave stain left upon the profession by certain degenerate members of it may be obliterated.[258]

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[256] Mitscherlich and Mielke, *Medizin ohne Menschlichkeit,* 14.

[257] Mitscherlich and Mielke, *Medizin ohne Menschlichkeit,* 14.

[258] "Vorwort," in Mitscherlich and Mielke, *Medizin ohne Menschlichkeit: Medizinische und eugenische Irrwege unter Diktatur, Bürokratie und Krieg* (Heidelberg: Verlag Lambert Schneider, 1949), viii.

It seems as though that "stain" was easy to "obliterate." Mitscherlich wrote in a later preface that "everything seems to have been forgotten. The amazing recovery of Federal Germany may be regarded psychologically as an example of "undoing the past," a vast process of eliminating the traces.[259] He expressed his shock and dismay at the German medical community's attitude regarding the Nazi era, noting that its "efficiency and talents for organization have thrust horrors into the background." He went on to predict that this repression would have to be dealt with, and "that the future will show whether any truly educative progress has been made, in the sense of recognition and thorough study of national guilt."[260]

THE REEVALUATION OF THE NAZI PERIOD

While several works concerning the various medical war crimes were produced, it took a substantial amount of time before the high number of Austrian and German doctors involved in the Nazi party, and their involvement in medical war crimes, was revealed.

Following the war, historians too paid little attention to the actions of Nazi doctors.[261] The area was constructed as a historical anomaly[262] and, as one reviewer of

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[259] Alexander Mitscherlich and Fred Mielke, *The Death Doctors.* Trans. James Cleugh (London: ELEK Books Limited, 1962), 20.

[260] Mitscherlich and Mielke, *The Death Doctors,* 21.

[261] An exception is Raul Hilberg's monumental work *The Destruction of the European Jews* (New Haven: Yale University Press, 2003), which contained a lengthy section on Nazi medical experiments, 831, 1002-13, 1156.

[262] Kater, "The Burden of the Past."

Mitscherlich and Mielke's book asserted "too horrible for the ordinary reader."[263] As Michael H. Kater states in his monograph *Doctors under Hitler*:

> In the first two decades after the war, only books (and some articles) on the perverted physicians of the Third Reich came forth because the connection between their activities and the "normalcy" of ordinary doctors had not yet been forged. Moreover because historians generally were not interested in wider issues of social history, the "regular" medical profession under Hitler did not interest them.[264]

Whatever the reasons for the historical amnesia of the medical crimes of the Nazi period, as the years went on, the aforementioned discourses that maintained a general sense of innocence on the part of the German medical profession began to break down. Beginning in the 1980's both German and North American historians began to reveal through detailed studies the manner and extent to which Nazism permeated German Medicine.[265] Historians held Doctors responsible for the mechanization of killing[266] and for lending legitimacy to Nazi social Darwinist ideals.[267] It was also revealed that doctors joined the Nazi party in greater numbers than any other professional group. As Robert Jay Lifton argues "as a profession German physicians offered themselves to the regime. So also did most other professions; but with doctors that gift included using their intellectual authority to justify and carry out medicalized killing."[268]

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[263] C.K. Drinker, "Review: Doctors of Infamy the Story of the Nazi Medical Crimes," *Isis* 40, no.3 (1949): 301.

[264] Michael H. Kater, *Doctors under Hitler* (Chapel Hill: University of North Caroloina Press, 1989), 8.

[265] Lerner and Rothman, "Medicine and the Holocaust: Learning More of the Lessons," 793.

[266] Robert J. Lifton, *The Nazi Doctors: Medical Killing and the Psychology of Genocide* (New York: Basic Books, 1986).

[267] Robert N. Proctor, *Racial Hygiene: Medicine under the Nazis* (Cambridge, MA: Harvard University Press, 1988).

In addition, although Nazi ideology was more widespread, the research showed that the medical atrocities were not solely perpetrated by depraved mad men, but that "good," well-educated doctors also committed crimes, and concurrently revealed the "troubling phenomenon" of "quality science" under Nazism.[269]

While the studies demonstrated that Nazism and crimes associated with it were far more pervasive in the medical profession than first thought, the research also proved that the racial ideology driving Nazi physicians was not unique to Germany and that many Nazi doctors had connections to North America and to other parts of Europe.

Parallels were also drawn between medical ethical issues under National Socialism and current medical practices. One of the most effective and original monographs to problematize these issues is *Nazi War on Cancer* by Robert Proctor. The study asks difficult questions with respect to Nazi doctors and scientists, and the validity of their research. It demonstrates that "good" science can be done by bad doctors.

> Do we look at history differently when we learn that Nazi leaders opposed tobacco, or that Nazi health officials worried about asbestos- induced lung cancer? I think we do. We learn that Nazism was a more subtle phenomenon than we commonly imagine, more seductive, more plausible. We learn the barriers which separate "us" from "them" are not as high as some would like to imagine. We learn that there are chilling parallels between those times and ours. But we also get a better sense of why so many Germans – and especially German doctors – welcomed the Nazi movement.[270]

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[268] Lifton, *The Nazi Doctors,* 18, 43-44.

[269] Proctor, *The Nazi War on Cancer*, 7.

[270] Proctor, *The Nazi War on Cancer,* 7.

These new studies did not, for the most part, prompt North American physicians to re-examine their own histories, nor did they have the effect of humanizing the 'Nazi physician' within the medical profession itself. In the British and North American medical communities, the widening of the scope of complicity had the effect of expanding the one-dimensional vilification to include all doctors and scientists working in German-occupied areas during the Second World War.

As a result of the increased awareness of the pervasive nature of Nazi medicine, new inquiries were conducted into German medical research during the war era. The investigations often yielded disturbing results. It was in this period that the citation of Nazi medical experiments conducted at concentration camps during the war came under intensified heavy criticism within the medical and scientific communities. While many projects were still classified by the American government, those that were in the public domain, such as the Dachau hypothermia experiments, had long been considered a part of the legitimate scientific literature and were regularly cited.[271]

Aside from the violence to the subjects of the experiments, the scientific methods and the legitimacy were questioned. In many of these arguments the science behind the experiments was not the only thing called into question; the personal lives and ideologies of the doctors and scientists became inextricably intertwined with their work. The educational background, political affiliations, and personal relationships of the scientists came under attack, and articles on the subject made logical arguments peppered with sensational and sometimes unsubstantiated details.

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[271] For example Kristine Moe contends that "at least forty-five research articles published since World War II draw upon data from Nazi experiments. " Kristine Moe, "Should the Nazi Research Data Be Cited?" *The Hastings Center Report* 14, no.6 (1984):2.

An example of this is a frequently cited special section of the *New England Journal of Medicine.* Robert L. Berger, a surgeon and holocaust survivor questioned both the scientific validity of the Dachau experiments and the personal life of experiment director Dr. Sigmund Rasher in his article "Nazi Science-The Dachau Hypothermia Experiments."[272] The article spends several pages systematically debunking the results of the experiments. The author then turns his attention to Sigmund Rascher, the principal investigator of the study, who is accused of being a substandard medical student, and having both Communist[273] and Nazi sympathies.[274] Berger states that "the flawed science is compounded by the evidence that the director of the project showed a consistent pattern of dishonesty and deception in his professional as well as his personal life."[275] At the end of the article it is noted that Rascher's private ventures rivaled his scientific exploits in grotesqueness and that he "collected human skin for making saddles, riding breeches, ladies' handbags, and other personal items. He sold the finished products to colleagues."[276] Whether or not Rascher actually collected skin is still up for debate. Although Berger does not give a source for this information his claim was not questioned. Presumably if Rascher was capable of performing unethical experiments in his professional life he could be capable of anything in his personal life.

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[272] Robert L. Berger, "Nazi Science-The Dachau Hypothermia Experiments," *New England Journal of Medicine* 322, no. 20 (1990): 1435-1440.

[273] Berger, "Nazi Science," 1438.

[274] Berger, "Nazi Science," 1438.

[275] Berger, "Nazi Science," 1440.

[276] No source was identified for this information. Berger, "Nazi Science," 1439.

PHYSICIANS' DISCOURSES ON THE PERNKOPF ANATOMY TEXT

While the investigations into Sigmund Rascher provide an extreme example of what investigations into former Nazi doctors produced, the aforementioned shift in perspective also provided a space for the reevaluation of Eduard Pernkopf and the Pernkopf anatomy text. In 1985 Gerald Weissmann published a well-researched, balanced article focusing on the social Darwinist beliefs held by Pernkopf.[277] This early research stressed memory and warned against the dangers of collective amnesia on the part of the medical profession. Dr. Weissman reminds us that "almost 50 years later the record of the closing trap has been almost completely erased. Many of us look back to the 1930's as a chic time when the music, the clothes, the décor – the going – was good. The Springtime for Pernkopf has not surfaced in serious literature."[278]

In 1988 David J. Williams, a professor of Veterinary Medicine at Purdue University, published an article in the *Journal of Biocommunication* on the history of the Pernkopf text. The article, which received the association of Medical Illustrators 1989 Literary Award, primarily focuses on the merits of the authors, artists, and the text, and only briefly discusses the period of German occupation in Vienna.[279] While the article does briefly discuss Pernkopf's political orientation, Dr. Williams does not condemn the text, ending his article with:

> Nazi science and art of merit, regardless of its contribution to mankind, can be difficult to fully appreciate in light of the incredible cruelties the regime inflicted on Jews and others it considered its enemies. For this reason Pernkopf's *Topographische Anatomie des Menschen* will always be controversial and will,

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[277] Weissmann, "Springtime for Pernkopf," 142-68.

[278] Weissmann, "Springtime for Pernkopf."

[279] Williams, "The History of Eduard Pernkopf's," 2-12.

> unfortunately, never be acknowledged by some as the masterpiece it truly is. For others it will remain the greatest work yet done in anatomic illustration.[280]

Williams's findings received surprisingly little attention from the medical community. Wade suggests this may have been the result of the lesser known journal in which the article was published, in combination with Williams's largely upbeat appraisal of the text.[281]

It was not until the eve of the fiftieth anniversary of the Nuremburg trials that an article written by former University of Vienna faculty member Edzard Ernst refocused attention on the topic. Appearing in the *Annals of Internal Medicine*, "A Leading Medical School Seriously Damaged: Vienna 1938"[282] dealt with the many ethical issues pertaining to the University of Vienna and its then little publicized Nazi past.

"Nazi Origins of an Anatomy Text: The Pernkopf Atlas," a letter to the editor written by Dr. William Seidelman (University of Toronto) and Dr. Howard Israel (Columbia), ignited further debate on the subject. Dr. Israel was made aware of the Nazi origins of the text when a senior colleague brought it to his attention in the early 1990s.[283]

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[280] Williams, "The History of Eduard Pernkopf's," 11.

[281] Wade, *Doctors Question Use of Nazi Medical Atlas,* C1.

[282] Ernst, "A leading Medical School Seriously Damaged: Vienna 1938," 789-792.

[283] "He saw me with the book open and he mentioned that he had heard this might be a piece of work from the Nazi period. I felt personally involved because I had used the book, I had gained from the book. I felt my patients had gained from my use of the book…I had no clue that I might be using a product of Nazi medicine." Howard Israel quoted in "Remains of the Holocaust: not all the victims of Nazi medical experiments have been laid to rest. Dr. William Seidelman wants to know why," *Canadian Business: The Internet and Technology Convention Supplement* (Toronto: Fall, 1996): 65.

Israel began to notify period scholars, and "out of all the people I contacted, Bill [William] Seidelman had the knowledge, the understanding, the passion for what is right," says Israel. "He didn't say, 'Oh, isn't this interesting,' but 'My God, we can't let that go.'" [284] Dr. Israel and Dr. Seidelman wrote numerous articles and letters to the editor. They also contacted several Austrian and German universities, and requested an investigation into the origins of the Atlas.[285]

The resulting debate played out in the most prestigious English language medical journals, including the *Annals of Internal Medicine,*[286] the *Journal of the American Medical Association* (between November 1996 and April 1997),[287] *The British Medical Journal* (beginning in the December 1996 issue),[288] *The Lancet* (from May 1998 to July of 2000), and the *Archives of Dermatology* (from May 2001 until February 2002). Also of interest is an article by Garett Riggs, entitled "What Should We Do about Eduard Pernkopf's Atlas?" which appeared in the April 1998 edition of *Academic Medicine.* The article discusses the many aspects of the controversy and also addresses the discussions surrounding it.[289]

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[284] Israel quoted in "Remains of the Holocaust," 65.

[285] Howard A. Israel, "Origins of the Pernkopf Anatomy Atlas-*Reply,*" *Journal of the American Medical Association* 277, no. 14 (1997): 1123; William E Seidelman and Howard A. Israel, "Nuremberg Lamentation: For the Forgotten Victims of Medical Science," *British Medical Journal* 313 (1996):1463-1467.

[286] One of the most frequently cited examples is the article by Richard S. Panush, and Robert M. Briggs, "The Exodus of a Medical School," 963.

[287] For example Daniel S. Cutler, "Origins of the Pernkopf Anatomy Atlas," *Journal of the American Medical Association* 277, no. 14 (1997): 1122; Alfred Ebenbauer and Wolfgang Schütz, "Origins of the Pernkopf Anatomy Atlas[Letter]," *Journal of the American Medical Association* 277, no.14 (1997): 1123-1124.

[288] For example Fred B. Charatan, "Anatomy Textbook Has Nazi Origins," *British Medical Journal* 313 (1996): 1422.

While the early articles on the subject presented well-researched, logical arguments on the text and its origins, many of the later letters and newspaper articles did not reflect the spirit of the original scholarship, but rather took the form of polemical articles, and emotionally-charged letters to the editor. The discussion came to center on how the text should be treated, i.e. should it remain in the libraries, should it continue to be published, and should it continue to be cited in academic publications. The letters and articles also strongly criticized Nazi medicine, medical experiments, and denounced specific German physicians. Many of the articles and letters, however, echoed Dr. Israel and Dr. Seidelman's letters and called for a thorough investigation by the University of Vienna into the origins of the bodies used as models in the book, and the commemoration of the bodies used to illustrate the text.

In 1997, largely as a result of the physicians' debate on the Pernkopf text, the University of Vienna launched an investigation into its author and the origins of the text. Kater has argued that within the German medical context "this deliberate effort to disown the most recent sordid past has logically implied the negation of any possible links between medical aberrations typified by concentration camp medicine and the more questionable aspects of a pre-1933 history of the German medical profession on the whole."[290] Although many of Kater's assertions concerning the German context apply in the case of Pernkopf, as a work of an Austrian anatomist the Pernkopf anatomy text involves a number of additional political issues not addressed in the German context. In order to better understand the more nuanced problems with the Pernkopf anatomy atlas the next chapter will discuss the ways in which the complex political situation in Austria had on both the reevaluation of the Pernkopf anatomy text and Senate Investigation by the University of Vienna.

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[289] Garett Riggs,"What Should We Do about Eduard Pernkopf's Atlas?" 380-386.

[290] Kater, "The Burden of the Past," 32.

CHAPTER III: PROBLEMATIZED - THE POLITICS OF PERNKOPF

INTRODUCTION

On July 24, 1934 a contingent of Austrian Nazis disguised as police officers entered the Chancellery in Vienna. With marginal public support, and no legitimate way to engage in national politics,[291] the group planned to seize power by force. The attempted putsch, however, went terribly wrong. During the botched effort *Bundeskanzler* Engelbert Dollfuβ was fatally shot. He died slowly and painfully. As he bled to death he was denied both medical attention and a priest to perform his last rites.

When news of Dollfuβ's death reached the global political community many were outraged, and most feared an imminent war.[292] It was noted, however, that the Nazi revolt had failed. It was suggested that "by dying for Austrian independence Dr. Dollfuβ had secured it more firmly than he could have in life. *Anschluss*, the diplomats held, was being buried with him and thus one of the greatest threats to peace had been removed."[293]

For a short time this assertion proved true. The German radio and press that had long accused Dollfuβ and his government of "fraud, bribery, brutality, and even murder,"[294] suddenly "evidenced regret at his untimely passing."[295] Hitler, under pressure from Mussolini, publicly distanced himself from the Austrian Nazis, and inevitably" delayed the *Anschluss.*[296] In less than four years, however, Austria was incorporated into the German Reich, and hundreds of thousands Austiran citizens cheered Hitler when he declared the *Anschluss* the "greatest achievement" of his life.[297]

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[291] The Austrian Nazi party had been banned a year earlier following a series of terrorist attacks including an assassination attempt on Chancellor Dollfuβ.

[292] Otto D. Tolischus, "Germany Resents Foreign Suspicion – Cites Correctness of Attitude towards Putsch – War Fear Grips the People," *New York Times*, 27 July 1934, 18.

[293] Tolischus, "Germany Resents Foreign Suspicion," 1.

[294] Frederick T. Birchall, "Nazi's Blame Foe for Vienna Attack – Berlin Papers Say Attempt to Kill Dollfuβ Was Made by a Socialist," *New York Times*, 4 October 1933, 1.

There is no doubt that numerous Austrians were ideologically opposed to the new regime, and that thousands lost their lives in an attempt to protect Austrian nationalism and fellow citizens from the Nazis.[298] Eduard Pernkopf, however, was not one of these people.

The history of Austria's involvement and culpability in the Second World War is difficult to discuss. On the one hand, many see Austria as "Hitler's first victim." Numerous Austrians opposed the *Anschluss* and, particularly during the final stages of the war, fought the Nazi regime. On the other hand, unlike the other victims of the Nazis, Austria did not offer any military resistance to the German occupation, but instead welcomed it with open arms. In addition, Austria had a long history of violent anti-Semitism. Many Austrians, like Eduard Pernkopf, were deeply committed to the Nazi

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[295] Walter B. Maass, *Country without a Name: Austria under Nazi Rule 1938-1945* (New York: Frederick Ungar Publishing Co., 1979), 6.

[296] Robert H. Keyserlingk, *Austria in World War II: An Anglo-American Dilemma* (Montreal: McGill-Queens University Press, 1988), 31; and Evan Burr Bukey, *Hitler's Austria: Popular Sentiment in Austria in the Nazi Era 1938-1945* (Chapel Hill: The University of North Carolina Press, 2000), 15.

[297] Hubert Feichtlbauer, *The Austrian Dilemma: An Inquiry into National Socialism and Racism in Austria* (Vienna: Holzhausen Verlag, 2001), 56.

[298] For more information on the contributions of the Austrian resistance see: Fritz Molden, *Fires in the Night: The Sacrifices and Significance of the Austrian Resistance, 1938-1945* (San Francisco: Westview Press, 1989), and Radomir V. Luza, *The Resistance in Austria, 1938-1945* (Minneapolis: University of Minnesota Press, 1984).

party prior to the *Anschluss*, and actively contributed to war, persecution, violence, and genocide under the swastika.

The *Anschluss*, anti-Semitism, and the politics of memory have had a profound impact on Austrian history. This chapter will explore the effects that Austria's complex political history has had on the reception of Eduard Pernkopf and his anatomy text. It will demonstrate how Pernkopf, a Nazi during the illegal period, was implicated in the ideological and political systems that provided him with his cadavers. It will argue that the difficult and complex nature of the Anschluss, anti-Semitism, and the victimization myth in Austrian politics were significant factors in the delay of the reevaluation of the Pernkopf text, and will discuss the ways in which these factors affected the Senate Investigation of the University of Vienna that resulted from the Pernkopf controversy.

BLACK, WHITE, OR GREY? AUSTRIA AND THE *ANSCHLUSS*

On Friday March 11th 1938 Nazi troops crossed the German border and entered Austria. When the battalion reached Vienna the next day and marched down Mariahilferstraβe, they were met by thousands of "enthusiastic persons waving swastika flags and chorusing Nazi slogans."[299] By the next morning Austria had officially been incorporated into the German Reich, and the "former capital and 'residential city' of Austria woke up as a German provincial town."[300] An unprecedented 250,000 - 500,000 enthusiastic Viennese citizens crowded Vienna's Heldenplatz to welcome their new leader, Adolf Hitler, as he proclaimed a "new mission"[301] for the nation. A national plebiscite on 10 April 1938 revealed that an overwhelming majority of Austrian citizens supported both Hitler, and the *Anschluss*.[302]

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[299] G.E.R. Geyde, "Shake-Up is Speedy: Austrian Nazis Amazed as German is Placed over Chancellor – Hitler in Vienna Today," *New York Times,* 14 March 1938, 1.

[300] Oswald Dutch, *Thus Died Austria* (London: Edward Arnold & Co., 1938), 242.

[301] Bukey, *Hitler's Austria,* 30.

Although millions publicly welcomed the new regime, the nation was divided on the subject. As a *New York Times* writer observed:

> There are Austrians, long converted to the cause of Hitler, and ready to acclaim him as a savior, who will find satisfaction in this historic event. There are other Austrians who will read in it the doom of all they cherish. To these Austrians, the dissidents, the blessings of the union with Germany are already being measured out. The cat o'-nine-tails is whistling its persuasive argument in the streets of Vienna. Liberals and Socialists who have been permitted to remain at liberty even under the reactionary regimes which have prevailed in Austria in recent years are being herded into concentration camps.[303]

The plebiscite and cheering crowds that greeted Hitler and his cavalcade were not necessarily indicative of universal support for either the *Anschluss* or the Nazi party. As Evan Burr Bukey contends, there can be no doubt that the initial enthusiasm for the *Anschluss* was both genuine and spontaneous,[304] but there are a number of reasons for this outpouring of support. First, Bukey argues it is evident that the population was relieved to have avoided civil war and bloodshed. Many saw the presence of the German army as a protection against foreign aggression. Second, almost every Austrian hoped for a dramatic improvement in the nation's abysmal economic conditions. Unemployment, high food prices, and massive indebtedness had plagued the country for years. Most Austrians were aware of the improved economic situation in Germany, and hoped Hitler could do the same for Austria.[305] Finally, Austria had a long tradition of anti-Semitism, and as Buckey asserts, "there can be little doubt that millions of people welcomed the *Anschluss* as a chance to put an end to the so-called Jewish Question…That the new regime openly sanctioned persecution and Aryanization, in other words, could only enhance its popularity."[306]

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[302] The results of the plebiscite should be viewed with a grain of salt. Many "politically unreliable Austrians" were excluded from the vote, and the ballot was purposefully designed to illicit a "yes" vote (it had a large circle for "yes" and a small circle for "no"). Feichtlbauer, *The Austrian Dilemma*, 57.

[303] "Austria Disappears," *New York Times*, 14 March 1938, 14.

[304] Bukey, *Hitler's Austria*, 33.

While many did initially approve of the new regime, others, like Oswald Dutch who witnessed the *Anschluss* in Vienna, immediately recognized it as the end of the nation and the destruction of a unique culture.

> For one who has known Austria and her people it is difficult to believe that the particular culture of this free, lovable, beautiful, serene land, whose art and whose character comprise almost innumerable Germanic, Slavonic, Latin, and Magyar elements welded into such a unique harmony called Austrian, will readily exchange its charming "Schlamperei" and everlasting hospitality for the super-militarized, ruthlessly organized and all too frugal life of the Third Reich. It is difficult, indeed, to believe that such a land can look forward under Hitler to anything other than rapid decay and ultimate destruction.[307]

Although many Austrian citizens had mixed emotions on the subject, daily life did measurably improve for some in the months following the *Anschluss*. In an effort to buttress popular support for the party the new government enacted a number of extremely popular measures. They set up soup kitchens and delivered food to the needy. The new Nazi government extended German social security benefits to Austrian citizens, sent thousands on "recuperative holidays" to the Reich, and removed an unpopular bicycle fee. They also ended the seizure and auction of indebted farmsteads and announced the transfer of 60 million marks for industrial development and agricultural modernization.[308]

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[305] Bukey, *Hitler's Austria*, 33.

[306] Bukey, *Hitler's Austria*, 33.

[307] Dutch, *Thus Died Austria*, 8.

While daily life improved for some, for others it quickly deteriorated. It was particularly difficult for political groups who had openly opposed the Nazi party, such as the above mentioned Liberals and Socialists. Life, however, was immediately radically worsened for the Austrian Jewish community.

ANTI-SEMITISM IN VIENNA

Open and violent Jewish persecution began immediately following the *Anschluss*. For example, on March 15, 1938 crowds called members of the Viennese Jewish community from their homes and forced them to scrub pro-Austrian slogans from the street. As they scrubbed they were verbally assaulted by the onlookers who shouted "Perish Jewry!" "Out with the Jews!" and "Who found work for the Jews? Adolf Hitler!"[309]

Passport offices displayed signs stating "All Borders Closed to Jews!"[310] Many Viennese Jews attempted to flee to Czechoslovakia, Switzerland, Italy, or Poland. Nazi Storm Troopers, however, were "exercising strict control" at the borders. As a result of the Nazi persecution, and lack of means to escape it, many committed suicide,[311] as *New York Times* writer G.E.R. Geyde observed in March of 1938:

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[308] Bukey, *Hitler's Austria*, 35.

[309] "Jews Humiliated by Vienna Crowds; Families Compelled to Scrub Streets, Though German Guards Drive off Mob," *New York Times*, 16 March 1938, 8.

[310] "Jews Humiliated," 1.

[311] Eckart Früh, "Terreur et suicide a Vienne apres l'annexation de l'Autriche" in *L'Anschluss une affaire Européenne,* ed. Felix Kreissler (Rouen: Publications de l'Université de Rouen Centre d'Études et de Recherches Autrichiennes, 1991), 92.

> The death carts of the Anatomical Institution are busy daily collecting the bodies of those poisoned by their own hands or by those nearest and dearest to them. Death seems to them the kindest gift for those, well-favoured or humble, for whom once smiling Austria has become a vast prison from which there is no outlet and within which all chances of livelihood is denied.
>
> Where are the Viennese, one asks daily as one passes through familiar streets in their unfamiliar garb. Is this the Vienna where weeping Jews are led by sturdy Storm Troopers from the ghetto or smart café and forced to wash Schuschnigg's stenciled face from the walls and pavement?[312]

For the most part those forcing Viennese Jews to wash the streets were not Germans, but Viennese citizens. One German Nazi even "expressed some astonishment at the speed anti-Semitism was being introduced here [in Vienna]" and commented that it "was going to make the plight of Viennese Jews far worse than it was in Germany, where it had been introduced with some gradualness."[313] Given current discussions regarding the Second World War, it is difficult to believe that a country could be more anti-Semitic than Germany, but this was true for many European countries including Austria. As Weiss explains "Racism and anti-Semitism were more intense and widespread among the Germans of the [former] Austrian Empire than in Germany itself."[314]

The historical reasons for Austrian anti-Semitism are varied and complex, but the five major reasons for European anti-Semitism that Weiss points to in his book *The Politics of Hate* also apply to Austria. First, he cites fundamental ideological differences with Christians. "Christian Hostility," he says, reinforced anti-Semitic movements, and in some nations – notably Poland and Austria – it helped to create a culture that allowed them to flourish."[315] The second was economic "Jews were plagued for centuries by accusations that they innately preferred to exploit and manipulate others through dishonest commercial practices and usurious money lending."[316] He also points to the "Association of Jews with liberal and progressive movements" and to anthropology which "by the later 19th century gave scientific validity to educated people who wished to use racism to justify imperialism, competitive capitalism, discrimination, segregation, slavery and conquest in war."[317] Finally, he points to ethnic nationalism which was particularly powerful in Central and Eastern Europe.[318]

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[312] G.E.R. Geyde, "Old Vienna Is Dead: A Nazi Vienna Is Born; Will the Dragon Submit Its Problems to Arbitration?" *New York Times,* 20 March 1938, 3.

[313] "Jews Humiliated," 1.

[314] Weiss, *The Politics of Hate*, 61.

In Austria, Jewish people had been blamed for everything from the plague to the dissolution of the Austro-Hungarian Empire. This anti-Semitism repeatedly erupted into violence in Vienna. Erika Weinzierl observed that the earliest records of Jewish persecution date to the 13th century and led to murder in the 15th century when, accused of desecrating the host and collaborating with the enemy, Jewish people were expelled from the city. The 210 Jews who remained were burned at the stake when they refused to be baptized.[319] Weinzierl's example was not an isolated incident. Over the centuries anti-Semitism became entrenched in Austrian culture. Brigitte Hammann argues that

> The situation became particularly dangerous at the time of the Turkish Wars in the 17th century, when religious fanaticism was by no means directed only at the Turks but at the native Jews as well. In 1623 the 130 Jewish families in Vienna were banned from the inner city and forcibly resettled in a new ghetto between the forks

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[315] Weiss, *The Politics of Hate*, 6.

[316] Weiss, *The Politics of Hate*, 6.

[317] Weiss, *The Politics of Hate*, 9-10

[318] Weiss, *The Politics of Hate*, 10.

[319] Erika Weinzierl, *Zu wenig Gerechte* (Wien: Verlag Styria, 1969).

> of the Danube. At the instigation of his Spanish wife Emperor Leopold I had all the Jews expelled in 1670. They lost all their property and all valuables, were only allowed to take with them what they could carry, and had to consider themselves lucky they did not lose their lives. The Viennese set fire to the synagogue and in its place erected a church dedicated to the Emperor's saint.[320]

The Jewish population in Vienna waxed and waned over the centuries, as they were repeatedly permitted to re-enter the city and subsequently expelled. It was not until 1792, when Emperor Joseph II issued an Edict of Tolerance, that Jewish people were given some measure of legal security. In 1867 The Liberal National Basic Law granted the Jewish population equal rights without qualification. For the first time "they were allowed to own property in the capital, could choose where they wanted to live, become governmental civil servants, attend universities without restrictions, and more."[321]

The new freedoms prompted an influx of Jewish immigration that increased the population exponentially.[322] Mass influxes of Jews from the east in the late 18th and early 19th century created resentment and re-ignited waves of anti-Semitism. This eventually led to the adoption of a resolution at the fourth German Convocation in Vienna that forbade citizens from having Jewish newspapers in their homes, shopping in Jewish stores, legal representation by Jews, and Jewish doctors from visiting German families. It also "appealed to German Universities" to give "no satisfaction to the Jews!"[323]

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[320] Brigitte Hamann, *Hitler's Vienna: A Dictator's Apprenticeship* (New York: Oxford University Press, 1999), 325.

[321] Hamann, *Hitler's Vienna*, 326.

[322] In 1860 - 6,200 Jewish People lived in Vienna; in 1870 – 40 200 ; in 1880 – 72 000; in 1890 – 118 500; in 1900 – 147 000; in 1910 – 175 000 (these numbers do not include "converted" Jewish people). Hamann, *Hitler's Vienna*, 326

[323] Feichtlbauer, *The Austrian Dilemma*, 27.

ANTI- SEMITISM AT THE UNIVERSITY OF VIENNA

The University of Vienna was one of the most prestigious centres of learning in Europe. It attracted students from Vienna itself and across the Empire. As a result the student body was more of a "national elite" than a Viennese one, and "the Jewish presence, by religion, was very considerable."[324]

The Jewish faith traditionally placed a high emphasis on education and learning.[325] In Austria, where for centuries Jewish people had been excluded from guilds and land ownership, university education was a legitimate path to respectable employment. Although they accounted for approximately 10 percent of the general population, Jewish students comprised almost one third of all university students in Vienna, 30 percent of law students, 35 percent of philosophy students, and 40-50 percent of medical students.[326]

In "the nineteenth century there was a widespread feeling that no European doctor's education was complete unless he had spent a considerable period of study in Vienna."[327] The world renowned medical faculty at the University of Vienna had one of the highest proportions of Jewish faculty members in Europe, but was deeply divided by racism and ethnic nationalism.

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[324] Steven Beller, *Vienna and the Jews 1867-1939: A Cultural History* (Cambridge: Cambridge University Press, 1989), 33.

[325] Beller, *Vienna and the Jews 1867-1939*, 88.

[326] Variations of these statistics can be found in the following monographs: Beller, *Vienna and the Jews 1867-1939,* 34; Feichtlbauer, *The Austrian Dilemma*, 27; and Hamann, *Hitler's Vienna*, 326.

[327] Max Neuburger, *British Medicine and the Vienna School: Contacts and Parallels* (London: Willam Heinemann Medical Books Limited, 1943), 7.

Many of the most celebrated Viennese anatomists of the late 19th and early 20th century were also pioneers of the anthropological race theories that helped to legitimize anti-Semitism. This included Joseph Hyrtl (1811-1894) and Carl Toldt (1840-1920). Joseph Hyrtl was the father of topographical anatomy in German-speaking countries.[328] Obsessed with variations between species of animals, he believed that life "in its thousandfold forms of existence achieved its own refinement…from the most primary and simple stirrings through an endless series of organisms."[329] Later in his career he became very interested in comparative anatomy, which he regarded as a "philosophical science."[330] Carl Toldt[331] produced one of the most popular anatomical atlases, entitled *Anatomisher Atlas für Studierende und Ärzte*.[332] In addition to his anatomical work, Toldt pursued his interests in the growing trend of anatomical anthropology. He conducted numerous comparative anthropological studies, including one on the "skull shapes of ancient Slavs," eventually disagreeing with the common perception "of the complete disappearance of the Neanderthal man."[333] He was also vigorously "patriotic." Lesky notes that "one of his most difficult periods was his rectorship in 1897-1898, when Badeni's language decree caused unrest among the German-speaking students of Austrian Universities…Toldt showed his basic character; an unconditional servant of science a protector of academic honor, and a faithful servant to the State."[334]

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[328] By the end of his career he became a master of corrosion anatomy and filled the anatomical museums of Vienna and the world with his injection preparations.

[329] Joseph Hyrtl, *Lehrbuch der Anatomie des Menschen mit Ruecksicht auf physiologische Begruendung und praktische Anwendung,* 7th edition (Vienna: 1862), 13.

[330] Hyrtl produced a number of anatomical atlases that revolutionized anatomy in German speaking universities. His first work entitled *Lehrbuch der Anatomie des Menschen mit Ruecksicht auf physiologische Begruendung und praktische Anwendung* was published in 1846, and his *Handbuch der topographischen Anatomie* published one year later in 1847. Both received tremendous praise in the medical field. See Max Neuburger, *British Medicine and the Vienna School: Contacts and Parallels* (London: Willam Heinemann Medical Books Limited, 1943), 63; and Erna Lesky, *The Vienna Medical School of the 19th Century* (Baltimore: The Johns Hopkins University Press, 1976), 75.

[331] A student of Hyrtl's student Carl Langer Ritter von Edenberg (1819-1887).

[332] Karl Toldt, *Anatomischer Atlas für Studierende und Ärzte* (Vienna: Urban and Schwarzenberg, 1896-1920).

Throughout the 19th and early 20th centuries the University of Vienna was a hotbed of anti-Semitic sentiment, particularly in the fields of law and medicine. In 1876 this was made explicit by the famous professor of medicine Theodore Billroth's criticism of what he considered the disproportionately large share of Jewish medical students from Hungary and Galicia. Billroth questioned the success of assimilation, arguing "that the Jews are a sharply defined nation, and that no Jew, just like no Iranian, Frenchman, New Zealander, or an African can ever become a German…Therefore [we should] neither expect nor want the Jews ever to become Germans in the sense that in national battles they feel the way we Germans do."[335]

In the latter years of the 19th century, several fraternities (*Burschenschaften*) removed their Jewish members and enacted "Aryan Clauses."[336] In the 1880s violence against Jewish students at the University of Vienna became almost "routine." Berkley mentions that "the *Burschenschaften* would spend Saturday afternoon marching up and

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9[333] Lesky, *The Vienna Medical School of the 19th Century,* 459.

[334] Ferdinand Hochstetter (1861-1954) became the director of the Anatomy Institute of Vienna, and it was Hochstetter,"Toldt's natural and legitimate heir," who trained and mentored Eduard Pernkopf. Lesky, *The Vienna Medical School of the 19th Century,* 460.

[335] Hamann, *Hitler's Vienna*, 326.

[336] Hamann, *Hitler's Vienna*, 330.

down the university courtyard singing German national songs; groups would occasionally break up to attack Slavs, Italians, Hungarians, and especially Jews."[337] It was in this period that the university made "anti-Semitism intellectually 'respectable,' and the 'intelligentsia' which fed it to a troubled populace."[338]

This practice continued well into the 20th century. In the early 1900s

> The University in particular remained a bastion of *Judenhetze*…They would enter a lecture hall shouting '*Juden Heraus,*' [Jews out] keeping up the refrain until the Jewish students gathered up their books and trooped out of the room. Since the Austro-Germans would resort to violence at the least provocation, and sometimes without provocation, Jewish students learned how and when to use side and back entrances. They did not always succeed, however, in avoiding physical harm.[339]

For example, in the 1920s students picketed Jewish students to prevent their return to the university,[340] and in 1931 a rash of student violence surrounded a student election. "Nationalist" students "rushed into lecture rooms throwing out and beating Jewish students."[341] The University Rector, who, a contemporary journalist commented, had "frequently given evidence of strongly anti-Semitic, Nationalist sentiments,"[342] did little to stop the fighting that continued for three days.

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[337] George E. Berkley, *Vienna and Its Jews: The Tragedy of Success 1880s-1980s* (Cambridge: Abt Books, 1988), 74.

[338] Karl R. Stadler, *Austria* (New York: Ernest Benn Limited, 1971).

[339] Berkley, *Vienna and Its Jews,* 107.

[340] "Vienna Students Bar Jews; Pickets Prevent Their Return to the State University," *New York Times*, 1 December 1922.

[341] "Students Beat Jews at Vienna University; Clashes Arise from Protest against Discrimination in Forthcoming Election," *New York Times*, 3 February 1931, 13.

[342] "Students Beat Jews at Vienna University," 13.

Bruce F. Pauley affirms that "no other group in Austria was as radically, passionately, and violently anti-Semitic as students of University age."[343] Weiss continues:

> Western liberals often wonder why many of the best educated Germans and Austrians were racist while workers with only an eight-grade education were far less likely to be, even if unemployed. But as in Germany and Eastern Europe, reactionary racist views dominated universities and textbooks, and non-Jewish students were either children of the elite, or lower middle class strivers who competed with Jewish students for professional positions.[344]

EDUARD PERNKOPF AT THE UNIVERSITY OF VIENNA

In the fall of 1907 Eduard Pernkopf, one of aforementioned "middle class strivers," enrolled in the University of Vienna Medical School. During the course of his schooling between 51.2 and 59.4 percent of the teaching faculty members were Jewish.[345] The anatomy institute, however, was "split into two wings, structurally as well as politically. One wing was presided over by a professor who taught Nazis [Ferdinand Hochstetter], the other was headed by Tandler who taught Jews and other non-Nazi and liberal students as enrolled."[346] Pernkopf, was a student of Hochstetter, and quickly became a member of an anti-Semitic "nationalistic student fraternity, *Die akademische Burschenschaft Allemania,* founded in 1815."[347]

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[343] Bruce F. Pauley, *From Prejudice to Percecution: A History of Anti-Semitism in Austria* (Chapel Hill: University of North Carolina, 1992), 202.

[344] Weiss, *The Politics of Hate*, 92.

[345] Beller, *Vienna and the Jews*, 36.

[346] Berkley, *Vienna and Its Jews,* 206.

[347] Williams, "The History of Eduard Pernkopf''s," 2.

Pernkopf received his degree in 1912 and held several posts before becoming the assistant of Hochstetter (the director of the Anatomy Institute) in 1920.[348] He was made a Lecturer at the university in 1921, Associate Professor in 1927, Full Professor and Head of the Institute of Anatomy II in Vienna in 1933,[349] Dean [*Komissaricher Dekan*] of the Medical Faculty in 1938, and Rector [*Rektor*] of the University of Vienna from 1943-1945.[350]

Pernkopf's ascent through the ranks at the University of Vienna paralleled his involvement in the Nazi Party. A long-time anti-Semite, Pernkopf was a Nazi party supporter beginning in 1932. He became an official member of the party in April of 1933. In addition, Pernkopf joined the SA group Hardegg/Schenker-Demar when the Nazi party was illegal in Austria.[351] Pernkopf's loyalty was rewarded when the Nazi party came to power in 1938. His appointment as Dean of the Medical Faculty coincided with the *Anschluss*, and Willams remarked that "his rise to the presidency of the University of Vienna could not have happened without the approval of the NSDAP-controlled Ministry of Education in Berlin."[352]

Pernkopf was not a Nazi in name only. When the first volume of his text was published in 1937 many of the text's illustrations included swastikas (*Hackenkreuz*) and SS symbols. This act reflected both Pernkopf and his artists' strong commitment to the

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[348] Williams, "The History of Eduard Pernkopf''s," 3.

[349] "Scientific News and Notes," *Science* 78, no. 2014 (1933): 98.

[350] Malina, "Eduard Pernkof's Atlas," 196; and Williams, "The History of Eduard Pernkopf''s," 3.

[351] Malina, "Eduard Pernkof's Atlas," 196.

[352] Williams, "The History of Eduard Pernkopf''s," 9.

Nazi party. The practice was continued throughout the subsequent volumes of the text.[353] Pernkopf's decision to include swastikas in the text could be dismissed as pandering to contemporary political views; however, when the first edition of his text was published the Nazi party was not yet in power, in fact it was illegal in Vienna. Rather than simply benefiting from the party when it came to power Pernkopf was part of the machinery that helped Hitler come to and stay in power in Austria.

In addition to the inclusion of swastikas in his anatomical text, Pernkopf also adamantly advocated eugenics and medically-driven racial policies including marriage control and the sterilization of those he referred to as "genetically unfit." He affirmed these sentiments in his first official speech as Dean of the Medical Faculty.

> To assume the medical care – with all your professional skill – of the Body of the People [*Volkskörper*] which has been entrusted to you, not only in the positive sense of furthering the propagation of the fit, but also in the negative sense of eliminating the unfit and defective. The methods by which racial hygiene proceeds are well known to you: control of marriage, propagation of the genetically fit whose genetic, biologic constitution promises healthy descendants; discouragement of breeding by individuals who do not belong together properly, whose races clash; finally the exclusion [*Ausschaltung*] of the genetically inferior from future generations by sterilization and other means.[354]

His lengthy inauguration speech as Rector of the University of Vienna echoed similar sentiments, and ended with a "Sieg Heil!" to Hitler.[355]

These beliefs were quickly put into practice during his tenure as dean. Following his appointment in 1938 Pernkopf immediately began the process of expelling those he deemed unfit from the Medical Faculty. Professor Pernkopf sent a letter to all university staff to "clarify" whether or not they were Aryan. Married people were made to bring documentation for their spouses, and all professors had to "swear an oath of loyalty to Hitler." Pernkopf then submitted a list of those who were either unable or unwilling to take the oath.[356]

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[353] See Tables 1-3.

[354] Eduard Pernkopf in Weissman, "Springtime for Pernkopf," 153.

[355] Eduard Pernkopf, "Universität und Wissenschaft," in *Die Feierliche Rektorsinnauguration der Universität Wien* (Wien: Verlag der Ringbuchhandlung, 1944), 63.

Pernkopf would eventually expel 153 of the department's 197 faculty members. This amounted to 78 percent of the Medical Faculty's staff, a higher percentage than any other department at the University of Vienna, or "indeed of any university in Europe."[357] One reason for this may have been that the Faculty of Medicine University of Vienna had one of the highest percentages of Jewish teaching faculty in Europe prior to the Anschluss. While this may explain the high proportion of dismissed faculty members it does not explain why it occurred faster than any other university. The combination of long-term anti-Semitism and well coordinated student groups helped Pernkopf accomplish in months what had taken three years in Berlin, and five in Göttingen.[358]

In addition to advancing his professional career, Pernkopf's teaching and text both benefited from the *Anschluss* and the war. When Austria was annexed by Germany many people, fearing Nazi persecution, committed suicide. Many bodies were sent to the Anatomical Institute in Vienna, where Eduard Pernkopf had just assumed deanship.[359] Austria was also implicated in the willful deportation and murder of hundreds of thousands of Austrian citizens.[360] The University of Vienna's Medical Faculty, in particular, was home to doctors involved in both the "euthanasia" program and medical experiments. During the war Eduard Pernkopf received thousands of bodies of men, women, and children who died at the hands of the Nazis. The bodies were used for both teaching and the production of his anatomical atlas.

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[356] Ernst, "A Leading Medical School Seriously Damaged," 790.

[357] Ernst, "A Leading Medical School Seriously Damaged," 790.

[358] Ernst, "A Leading Medical School Seriously Damaged," 790.

[359] G.E.R. Geyde, "Old Vienna is Dead: A Nazi Vienna is Born; Will the Dragon Submit its Problems to Arbitration?" *New York Times,* 20 March 1938, 3.

DOCTORS IN AUSTRIA

Following the war Austrian medicine was confronted with many of the same issues as in Germany. Departments had been "cleansed" of Jewish faculty members, and the faculty who remained were usually members of the Nazi party and were either arrested or would have to go through some sort of "de-Nazification" process. But whereas in Germany doctors had invoked the "slippery-slope" and "sudden subversion" theories to explain the medical atrocities that occurred during the war, in Austria the aforementioned "new masters" did not just subjugate medicine, but according to the Austrian "victimization myth" subjugated the entire nation following the *Anschluss.* The Austrian "myth" stemmed from the 30 October 1943 Moscow Declaration on Austria in which the governments of the United Kingdom, the Soviet Union, and the United States called Austria the "first free country to fall victim to Hitlerite aggression."[361]

The declaration, however, was not intended to exonerate Austrians for their actions during the war. Indeed the declaration "reminded" Austria "that she has a responsibility which she cannot evade for participation in the war on the side of Hitlerite Germany, and that the final settlement account will inevitably be taken of her own her own contribution to the liberation."[362]

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[360] For statistics on deportations see: Florian Freud and Hans Safrian, *Expulsion and Extermination: The Fate of the Austrian Jews 1938-1945* (Vienna: The Austrian Resistance Archive, 1997).

[361] "The Moscow Declaration on Austria, 30 October 1943," in Keyserlingk, *Austria in World War II*, 207.

In fact the Moscow Declaration was intended as a part of a broad propagandistic campaign directed against the Nazis. Keyserlingk explaines that

> The declaration was issued as part of the Allies' political warfare attack on the enemy's morale in the Austrian area. Since the beginning of World War II propaganda and political warfare – morale busting of the enemy – had enjoyed a much larger role than it had in World War I. Hitler and the West had learned the wrong lessons from that war, namely, that modern, mass-based conflicts were lost or won by the strength or weakness of morale behind and on the front. Both sides believed almost mystically that military action, coupled with appropriate propaganda campaigns and economic blockade, could fatally injure an enemy's morale and lead to internal collapse.[363]

He goes on to say that the promised "Austrian resistance failed to materialize," and that "the cowed and demoralized population behind the Alpine lines could do little apart from mounting a few courageous and scattered actions near war's end. Nazi's control over Austria remained brutally effective to the end."[364] Almost all of the Austrian resistance movements that were present in the country were betrayed. At least 36 000 Austrian resistance fighters – about .5 percent of the population – were either executed or died in concentration camps.[365]

If the statements in the Moscow Declaration on Austria were made simply for propagandistic reasons, why were they maintained? Keyserlingk argues that following the war the victimization myth benefited both the Allies and the Austrians. For the former Allies the Cold War was the primary reason for maintaining this view. Largely as a result of its strategic location Austria became the literal middle man in the growing conflict between the Western powers and the Soviet Union. Keyserlingk argues "when East and West found themselves face to face over the prostrate body of Austria, it became expedient to pretend that the Moscow Declaration in fact reflected genuine political intentions."[366]

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[362] "The Moscow Declaration on Austria, 30 October 1943," in Keyserlingk, *Austria in World War II*, 208.

[363] Keyserlingk, *Austria in World War II*, 124.

[364] Keyserlingk, *Austria in World War II*, 159.

[365] Berkley, *Vienna and Its Jews*, 333. As we will see, some of the bodies of resistance fighters were sent to the University of Vienna's Department of Anatomy.

Within Austria the Moscow Declaration enabled Austrians to focus on "national reconciliation rather than large-scale retribution for questionable war-time activities."[367] Thomas Weir observed that by the late 1940's Austrians

> agreed to hide behind the 1943 Moscow declaration that had called Austria the first victim of Hitlerite aggression. The declaration had also stated that Austria was responsible for taking part in the war on the side of Nazi Germany…Responsibility, however, was not on the Austrian agenda, and over the years the government and the people went all out to duck it. They were victims and they fought for their own liberation – the role of the Resistance was played up far beyond its actual accomplishments… Victimhood became an Austrian mantra.
>
> Over time, victimhood became martyrdom – Austrians learned to emphasize how they had suffered under the Nazis. And gradually they persuaded the victors – and the rest of the world – that this living lie was the truth.[368]

The situation of German-occupied Austria is extremely complicated, as are the merits of the so-called victimization myth; however, one result of the myth was that former Nazi physicians in postwar Austria were under markedly less scrutiny than their German counterparts.

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[366] Keyserlingk, *Austria in World War II*, 190.

[367] Keyserlingk, *Austria in World War II*, 191.

[368] Thomas Weir, *The Setting of the Pearl: Vienna under Hitler* (Oxford: Oxford University Press, 2005), 305.

As a result of the shared language and pre-war border many Austrian Nazis were considered "German." By 1946 several notorious Austrian Nazi physicians were held by the British for their involvement in war crimes, and interest in Nuremberg defendant Beiglböck (an Austrian) necessitated new inquiries into Austrian universities. "The allegations resulted in a probe of Austrian medicine. Tension was rife between political forces wanting to purge the universities of all Nazi remnants, and medical elites seeking to consolidate their position after a purely nominal removal of a few Nazi doctors."[369]

Although it was suggested that the University of Graz and the University of Vienna close temporarily to allow students to be "de-Nazified,"[370] and non-Nazi professors to be hired,[371] many Austrian former Nazi doctors simply slipped under the radar and back into the medical profession. At the University of Vienna's Medical Department, only 19 of the nearly 200 faculty members were thought not to have been "burdened" by a National Socialist past. However, a "shortage" of available professors after the war led to many of those who had replaced Jewish colleagues during the Nazi occupation, even those with histories of overt misconduct, to retain employment with the university.[372]

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[369] Weindling, *Nazi Medicine and the Nuremberg Trials,* 42.

[370] Albion Ross, "Soviet Would Shut Vienna University; Russians Ask Step to Push Denazificaton Measures among Student Body," *New York Times*, 24 November 1946, 17.

[371] Albion Ross, "Austria is Seeking New Graz Faculty; University Will Be Closed If Education Ministry is Unable to Get Untainted Men," *New York Times*, 15 May 1946, 3.

[372] Ernst, "A Leading Medical School Seriously Damaged," 791.

Former Jewish Faculty members were at no point encouraged to return to the university, even though the University of Vienna publicly expressed a "shortage" of professors. In fact, the former faculty members were outright discouraged from returning. The University of Vienna cited the following "facts" to justify their position: "there were no Jews left for them to treat," "a shortage of housing and work," and that the current professors would be "unlikely to leave their posts."[373]

For Pernkopf, the defeat of the Nazi regime also effectively ended his public academic career. As a result of his long-term commitment to the Nazi party Pernkopf was dismissed from his position as Rector, and went on a 'vacation' to Salzburg, where he was arrested on August 10, 1945 and taken to the Salzburg prison. Pernkopf was then held for approximately two years in Glasenbach/Camp Marcus W. Orr prison camp, which had been set up by the Americans for former Nazis and War criminals.[374]

Pernkopf was subsequently named a "lesser incriminated person" and returned to Vienna. Having worked "hard, physical labor for the first time, he was in many ways a broken and dispirited man when released in 1948…Stripped of all titles and appointments but still highly regarded as a scientist by many of his old colleagues, Pernkopf was given two rooms at the Neurology Institute (*Neurologisches Institute der Universität Wien*),"[375] where, with his artists, he continued work on his Atlas until his death. Although Pernkopf died a "broken man" neither he nor his text's reputation was initially affected as a result of his political affiliations. His death was announced in the Necrology section of the

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[373] Ernst, "A Leading Medical School Seriously Damaged," 791.

[374] Malina, "Eduard Pernkopf's Atlas of Anatomy," 196.

[375] Williams, "The History of Eduard Pernkopf's," 10.

American Association for the Advancement of Science's journal *Science* without issue.[376] His atlas continued to be highly regarded, and was translated into several languages.[377] Eventually all references to the atlas's Nazi origins were removed. The swastikas found in early editions of the text were airbrushed out, and the atlas continued to garner praise through to the early 1990s.

When historians and doctors re-examined German medicine in the 1980s and early 1990s, Austria was generally excluded from the discussions. As a result of the long-term maintenance of the victimization myth Austria's Nazi history was largely ignored (or suppressed)[378] until the 1986 presidential election campaign of Kurt Waldheim. During the campaign the presidential hopeful, and former Secretary General of the United Nations, was accused of war crimes. The accusation attracted international media attention and focused intense scrutiny on Austria's role in the Second World War.[379] Waldheim was elected president in spite of the controversy surrounding his past. For some his election confirmed the suspicions that many Austrians continued to be anti-Semitic. At Waldeheim's request, however, during his term an investigation was launched into his military service record.[380] A panel of military historians from

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[376] "Necrology," *Science* 122, no. 3167 (1955): 463 and "Necrology," *Science* 122, no. 3169 (1955): 553.

[377] The text was translated into Modern Greek, French, Spanish, and Japanese.

[378] Berkely lists a number of examples of the active suppression of information in the chapter "Remembering to Forget," in *Vienna and Its Jews,* 345-356.

[379] Richard Basset, *Waldheim and Austria* (London: Viking, 1988).

[380] International Commission of Historians Designated to Establish the Military Service of Lt. Kurt Waldheim, *The Waldheim Report: Submitted February 8, 1988, to Federal Chancellor Dr. Franz Vranitzky* (Copenhagen, Denmark : Museum Tusculanum Press, University of Copenhagen, 1993).

Switzerland, West Germany, the United States, Israel, Belgium and Britain, in addition to a consultant from Greece, found that Waldeheim was not directly guilty of war crimes, but stressed that he must have had some knowledge of atrocities committed during the war.[381] Waldeheim took the results as vindication, stating: "Every person who served in the war knew about events," he added. "Not about everything, one more and another less, but from today's perspective it is easy to criticize, and to deduce that knowledge constitutes some kind of crime simply is not correct."[382] His response incited anger from the international community. Although Waldeheim was generally popular within Austria itself, he was "shunned by virtually every western European leader," and, in the interests of Austrian international relations, chose not to seek a second term in 1992.[383]

The controversy surrounding Waldheim cast a shadow over a nation that had been protected by the victimization myth for decades. In order to regain face internationally following the Waldheim controversy numerous investigations were launched into Austria's wartime past. In general, however, this exploration was limited to German-occupied Austria and did not extend to the nation's history of vehement anti-Semitism or to the Nazi activities that took place prior to the *Anschluss.*

THE UNIVERSITY OF VIENNA SENATE REPORT

When the international controversy surrounding the Pernkopf Text erupted in the mid-1990s the contemporaneous Waldheim debate made it difficult for Austrians to dismiss. The primary focus of the debate concerned the origin of the bodies used to illustrate the text. The graphic nature of the images, framed by Nazi symbols, led many to believe that Pernkopf obtained the bodies for his atlas from concentration camps. Many called for an investigation by the University of Vienna into Dr. Eduard Pernkopf, the Pernkopf anatomy text, and the Department of Anatomy.

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[381] Serge Schmemann, "Inquiry for Austria Declares Waldheim Knew of War Crimes," *New York Times*, 9 Feburary 1988.

[382] Kurt Waldheim as quoted in Schmemann, "Inquiry for Austria Declares Waldheim Knew of War Crimes,"

[383] "Waldheim Removes Himself From '92 Austrian Election," *New York Times*, 22 June 1991.

The University of Vienna, however, was initially resistant to the idea of a formal investigation into the text. Dr. Israel and Dr. Seidelman made numerous requests for Austrian Universities to examine their collections and eventually enlisted the help of Yad Vashem to "push for action."[384] At first, Vienna University denied that the pictures were from the war period; until we pointed out that many of the artists had included the dates that the illustrations were made.[385] The University of Vienna eventually succumbed to external pressure and agreed to launch an investigation. The inquiry, which came to be known as the "Senate Project," began in mid-1995 following a request in March 23 of that year to the Rector of the University of Vienna and the University of Innsbruck by Dr. Israel, Dr. Seidelman, and the Israeli Yad Vashem Memorial.

The coalition urged clarification of rumors about the origins of the anatomical preparations used to illustrate the *Pernkopf Atlas*. They called for a full investigation into the text and its origins, in addition to public acknowledgement, and commemoration of those depicted in the text by the institutions involved.[386] Throughout the course of the preliminary investigation at the University of Vienna it "became clear that the 'Pernkopf problem' required more intensive historical investigations that were only possible within a broader framework."[387] The resulting investigation, conducted between April 1997 and September 1998, had three main purposes:

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[384] Michael Leidig, "Nazi Victims Still on Display: Body Parts Being Used for Medical Research, Report Says," *The Montreal Gazette*, 13 October 1998, A21.

[385] William E. Seidelman as quoted in Michael Leidig's "Nazi Victims Still on Display," A21.

1. To clarify as fully and thoroughly as possible the suspicions pertaining to the use of the victims of the Nazi regime for the production of anatomical specimens for research and teaching purposes at the department of anatomy and in other university clinics and departments
2. To publish without reservation all compromising facts
3. To terminate such ethically and morally unacceptable practices as the retention and continued use of specimens about which there is even a suspicion that they were obtained from victims of Nazi justice: these mortal remains should be given an honorable burial[388]

Based on the above mentioned objectives the committee identified the following research areas and topics of investigation:

1. Research into the delivery of bodies to the Vienna Department of Anatomy and the use made of them in the years 1938-1945
2. Registration of all those who were executed at the Vienna District Court and whose bodies were then assigned to the Department of Anatomy
3. Research into the modes of execution at the Vienna District Court and the Jewish Victims who were sentences [sic] to death
4. Investigation into the disposal of bodies in the Mauthausen Concentration Camp and the associated Guser Camp
5. Inspection of the Department of Anatomy and its collection as well as other clinics and departments of the University of Vienna to ascertain whether the mortal remains of Nazi justice were held there

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[386] Gustav Spann, *Senatsprojekt der Universität Wien: Untersuchungenen zur Anatomischen Wissenschaft in Wien: 1938-1945* (Wien: University of Vienna, 1998).

[387] Malina, "Eduard Pernkopf's Atlas of Anatomy," 193.

[388] Gustav Spann, *Results of the Senate Project of the University of Vienna: Investigations of Anatomical Science at the University of Vienna 1938 – 1945* (University of Vienna, 1998): 5.

6. Investigation into the production of Eduard Pernkopf's anatomical atlas, entitled Topographical Human Anatomy, and the associated suspicions which had been expressed
7. Account of the political and scientific career of Eduard Pernkopf
8. Investigations into ways of dealing with the Nazi past and with the mortal remains of Nazi victims after 1945[389]

RESULTS OF THE SENATE INVESTIGATION

The investigation uncovered numerous incriminating findings, including, but not limited to, the following:

First, the research into the delivery of bodies to the Vienna Department of Anatomy revealed that bodies of at least 1377 executed persons, including 8 of Jewish origin, were delivered to the Department of Anatomy between 1938 and 1945. In addition, the investigation revealed that the bodies of several thousand children were sent to the department during the war. In 1941 alone, more than one 1100 children's bodies were assigned to the department of Anatomy.[390] According to the report, however, these children were "not counted as Nazi victims." The reasons for the decision to exclude these children as victims remain unclear.

Pernkopf received an additional 3964 so-called "free" bodies of "deceased persons from hospitals or geriatric homes whose relatives did not, or could not provide for a burial," or "whose last will bequeathed their bodies in this way."[391] The bodies were used for four main purposes:

1. Courses in dissection for students
2. The preparation of specimens for lectures

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[389] Spann, *Results of the Senate Project of the University of Vienna*, 5.

[390] Spann, *Results of the Senate Project of the University of Vienna*, 7.

[391] Spann, *Results of the Senate Project of the University of Vienna*, 7.

3. The preparation of permanent specimens for the anatomical collection
4. The preparation of specimens for the Anatomical Atlas of Eduard Pernkopf[392]

Second, "the investigation into the Registration of all those who were executed at the Vienna District Court in the years 1938-1945, and whose bodies were then assigned to the Department of Anatomy" revealed that:

> More than half of the reasons for execution make reference to crimes of resistance and disobedience towards the Nazi regime. No fewer than 526 persons were executed for "high treason." The definition of the concept of "victim of National Socialism" had to be broadened considerably in view of the considerable number of people who lost their lives because of the disproportionately severe penalties. For example illegal slaughter of animals, black-market trading or listening to enemy broadcasts, as well as such petty crimes as theft were all punishable by death.[393]

Essentially the report found that many of the so-called "executed criminals" were not in fact criminals, but were Austrian citizens who fell victim to the Nazi regime.

Third, the Inspection of the Department of Anatomy and its collection revealed 97 specimens of suspected Nazi origin. The broader investigation of all medical departments and clinics at the University of Vienna exposed an additional 98 specimens from the Department of Histological Embryology which originated from persons executed at the Vienna District Court. In the Department of Forensic Medicine the calvaria (skullcap) of General William Zehner, the former Secretary of State of the Army, was found. The General lost his life under "dubious circumstances" in 1938. He either committed suicide or was executed by the Gestapo, and "must in either case be considered a Nazi Victim."[394]

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[392] Spann, *Results of the Senate Project of the University of Vienna* , 7.

[393] Spann, *Results of the Senate Project of the University of Vienna*, 7.

[394] Spann, *Results of the Senate Project of the University of Vienna*, 9.

Six specimens fixed in formaldehyde, in addition to histological sections, and paraffin blocs were discovered in the Department of Neurology. The report noted that: "Almost all of these specimens came from Dr. Gross who donated them to the Department of Neurology in the period between 1953 and 1957. They originated from the euthanasia institution "Am Spiegelrund."[395] Numerous other specimens were also uncovered in the Department of Medical History including two specimens fixed in formaldehyde, one skeleton, a number of "extremities of unknown origin," and approximately one hundred histological sections.[396] Fourth, the investigation into the production of Eduard Pernkopf's anatomical atlas of *Topographical Human Anatomy*, revealed that it was "at least probable that many of the illustrations were indeed made on the basis of anatomical specimens derived from Nazi victims."[397] Finally, the investigations into ways of dealing with the Nazi past and with the mortal remains of Nazi victims after 1945 revealed that:

> After 1945 the victims of Nazi justice were quickly forgotten. There was also a very low awareness of the problem of dealing with their mortal remains. For example, the bodies of executed resistance fighters were kept in the Department of Anatomy until 1957. Brains of victims of the child euthanasia institution "Am Spiegelgrund" were used, without consideration, for scientific research.[398]

The aforementioned results were published in no less than four documents. The first, an article on Eduard Pernkopf's career by Peter Malina entitled "Eduard Pernkopf's

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[395] Spann, *Results of the Senate Project of the University of Vienna*, 9.

[396] Spann, *Results of the Senate Project of the University of Vienna*, 9.

[397] Spann, *Results of the Senate Project of the University of Vienna*, 10.

[398] Spann, *Results of the Senate Project of the University of Vienna*, 5.

Atlas of Anatomy or: the Fiction of 'Pure Science,'" preceded the complete report appearing in a special edition of the *Wiener Klinische Wochenshrift* commemorating the 60th anniversary of the dismissal of the Jewish faculty members of the Vienna Medical School.[399] The second document released was a twelve page English-language summary of the larger report. It lists the purposes of the investigation and the research areas. It then briefly summarizes the findings of each.[400] The third document released was the report itself. A six-hundred-page document written primarily in German, the complete report was produced by the University of Vienna and contains the majority of the information acquired from the investigation.[401] The fourth, written by Daniela C. Angetter on behalf of the Senate Project of the University of Vienna, entitled "Anatomical Science at the University of Vienna 1938-1945," appeared in the *Lancet* on April 22, 2000,[402] and provides a very brief summary of the larger Senate Report.

Although there were issues with the structure of the investigation and the presentation of the Senate Report, the current administration of the University of Vienna should be commended for their willingness to conduct an investigation into such a difficult period of its history. It is especially commendable in light of the refusal to do the same by other Austrian institutions, such as the University of Innsbruck, which is known to have a number of the original Pernkopf anatomical preparations, but has refused to conduct any formal investigation into the origins of their anatomical collections or their relationship to the text.[403] Senate Project investigator Dr. Daniela Angetter mentioned that at the time of the University of Vienna's investigation the only comparable study was conducted by the University of Tübingen in Germany and was completed in 1990.[404] According to Dr. Angetter, following the lead of the German investigation, the University of Vienna sought to "search, identify, and exclude any anatomical preparations of doubtful origin in order to guarantee that no bodily remains of victims of Nazi terror would be in use for any type of teaching, or on display in museum collections, on the premises of the medical faculty."[405]

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[399] Malina, "Eduard Pernkopf's Atlas of Anatomy or: the Fiction of 'Pure Science,'"193-201.

[400] Spann, *Results of the Senate Project of the University of Vienna,* 1-12.

[401] Spann, *Senatsprojekt der Universität Wien.*

[402] Angetter, "Anatomical Science at University of Vienna 1938-1945," 1454-1457.

QUESTIONS CONCERNING THE SENATE INVESTIGATION

The first summary of the final report concludes with the following statement:

> The results presented have enabled the main questions of the project to be resolved, so that the foundations have been laid for a final and honorable purging of the ethically and morally unacceptable conditions within the Medical faculty of the University of Vienna...There is a basic plan to expand the research focus here and to continue its work on an international level. The Findings of a 600 – page final report of the investigation will be made available to the general public in the coming months. In addition it is planned to send a representative selection of European and International libraries an information sheet about the research findings.[406]

Eerily mimicking the foreword written by the West German Medical Chambers concerning the Nuremberg trial, the statement asserts that the questions of the project have been answered, "the foundations laid for a final and honorable purging of the ethically and morally unacceptable conditions within the Medical faculty of the University of Vienna," and, like the German medical profession following the war, the University of Vienna will continue its work on an "international level."[407] While the aims of the project were commendable, many aspects of the investigation, the conclusions drawn from them by the University of Vienna, and the dissemination of the information elicit questions and concerns.

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[403] William E. Seidelman and Howard Israel, "Anatomy in Vienna," *The Lancet* 356 (2000): 343.

[404] Daniela C. Angetter, "Anatomical Science at University of Vienna 1938-1945," 1457.

[405] Daniela C. Angetter, "Anatomical Science at University of Vienna 1938-1945," 1457.

[406] Spann, *Results of the Senate Project of the University of Vienna*, 12.

First, while the investigation could not be expected to answer all of the questions concerning Eduard Pernkopf, the Pernkopf anatomy text, and the involvement of the University of Vienna in medical atrocities of the National Socialist era, by concerning itself solely with the Nazi/post-*Anschluss* era at the university, the project perpetuated the Austrian victimization myth. It deflected attention away from pre-*Anschluss* Nazi activities conducted at the university and made the examination about external forces of Nazism rather than internal issues. Like the German investigations following the war, the University of Vienna inquiry became a process of isolating, denying, and purging rather than acknowledging, addressing, and memorializing.

One glaring absence in the reports is a discussion of the presence of swastikas in volume one. Published in 1937, volume one of the *Topographische Anatomie des Menschen* contained nine swastikas.[408] This is a significantly lower number than later volumes; yet, the presence of any Nazi symbols is significant, as volume one was published before the *Anschluss*, during a time when the Nazi party was illegal in Austria.

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[407] Spann, *Results of the Senate Project of the University of Vienna*, 12.

[408] See Tables 1-3.

Although small, the swastikas point to both the permissibility and presence of Nazi activities in pre-*Anschluss* Vienna, and in particular to the presence of Nazi activity at the University of Vienna.

Second, the authors of the report stated that "with regard to the relevant procedures in the investigation of the Nazi past – and not only in Austria – the burden of proof here was inverted to fall on the accused rather than the plaintiff."[409] Contrary to the statement, however, many of the report's conclusions were skewed in favor of the "accused," and discussions of the incriminating evidence shrouded in doubt. For example, the report constantly reminds its readers that the "corpse book, which could have provided clues to the origin and use of the bodies was probably destroyed in an air raid on February 7th 1945."[410] As a result, it would be difficult to know the origin of any specific individual victim depicted in the text. Other evidence, however, confirmed with certainty that the bodies of at least 1377 executed prisoners were delivered to the department of Anatomy during the war years. Knowing then, that the bodies of at least 1377 prisoners were sent to the department, it is surprising that the report states that "The suspicion that a number of illustrations [in the Pernkopf text] – for instance, because of a strikingly short haircut, a cachectic figure or a circumcision – were based on bodies from concentration camps, possibly from victims of Jewish faith, could not be confirmed."[411] If the burden of proof was indeed to fall on the accused, as the report contends, then the passage should read that the suspicion "could not be denied," not that it "could not be confirmed."[412]

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[409] Spann, *Results of the Senate Project of the University of Vienna*, 5.

[410] Spann, *Results of the Senate Project of the University of Vienna*, 7.

[411] Spann, *Results of the Senate Project of the University of Vienna*, 11.

Third, numerous issues exist with the presentation and dissemination of the Senate Project. All of the publications produced by the University of Vienna regarding the Senate Investigation state that it was external pressure from American, Canadian, and Israeli physicians, and "in particular the Yad Vashem memorial" that prompted the investigation.[413] Although one of the main objectives identified by the investigators was "to publish without reservation all compromising facts" the results of the investigation were not made readily available.

Peter Malina's report would be available to those who have access to the *Wiener Klinische Wochenshrift* (*WKW*). The two major documents produced directly by the University, from which the majority of the aforementioned information was derived, however, were not as readily accessible. The preliminary summary of the Senate Investigation was available to only a select group of individuals and was not published in any of the journals involved in the physicians' debate. The major six-hundred page report is even more difficult to access. First, the complete report was published primarily in German and linguistic barriers would preclude many from reading the complete report. Second, in addition to the language barriers, the full report is physically difficult to obtain. There are only three copies of the full text available in German-speaking universities, and very limited access outside of Austria.[414] The single document that was widely distributed was Dr. Daniela Angetter's Senate Report summary which appeared in *The Lancet* in April of 2000.

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[412] Spann, *Results of the Senate Project of the University of Vienna*, 11.

[413] Spann, *Investigations of Anatomical Science at the Vienna 1938 – 1945*, 2, and 4; Angetter, "Anatomical Science at University of Vienna 1938-1945,"1454; Gustav Spann, "Untersuchungen zur anatomischen Wissenschaft in Wien 1938-1945," in *Senatsprojekt der Universität Wien,* 2; Malina, "Eduard Pernkopf's Atlas of Anatomy or: the Fiction of 'Pure Science,"193.

Angetter's article too elicits questions from those familiar with the complete senate report and the history of the Pernkopf anatomy text. A number of these questions were posed by Professor Michael Hubenstorf, whose concerns included, most significantly, Angetter's narrow focus on the Viennese anatomy institute, when the original report deals with more than a half a dozen Viennese institutions. He also notes the lack of attention paid to the relationship between "euthanasia" physician Heinrich Gross and Eduard Pernkopf. He specifically raises the question of a possible link between the two in the post-war period, considering Dr. Gross re-circulated a number of his specimens obtained during the war in the Department of Neuro(patho)logy where Eduard Pernkopf worked on his atlas after the war. Additionally, Dr. Hubenstorf argues "that the narrow focus on how Pernkopf's institute obtained corpses for its 'routine business' means that the more penetrating question of how Nazi medical practices provided science with an abundance of human specimens is not addressed."[415] Dr. Hubenstorf particularly focuses on the lack of attention paid to the internal questions raised regarding the Nazi past. He states that "before 1995, the internal debate about Vienna's medical Nazi past was deliberately kept out of Austrian professional medical journals. Now that it has reached the medical press why does Angetter ignore it?" Finally, he brings to light the omission on the part of the university to discuss the political context in the pre-1938 period. Although he does not elaborate on the point he reminds readers that "Pernkopf's institute was a focal point of Nazi activity even before the annexation of Austria to the German Reich in 1938."[416]

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[414] The universities in possession of the complete 600 page record entitled *Senatsprojekt der Universität Wien Untersuchungenen zur Anatomischen Wissenschaft in Wien: 1938-1945* are Vienna, Innsbruck, and Munich.

[415] Michael Hubenstorf, "Anatomical Science in Vienna," *The Lancet* 335 (2000): 1386.

In an article that appeared in the *Lancet* three months later, Dr. Seidelman and Dr. Israel also raised questions regarding Dr. Angetter's summary of the Senate Report, and Dr. Hubenstorf's response to it, stating that the two articles "on anatomy at the University of Vienna illustrate the difficulties of the historiography of medicine during the Third Reich. The paper by Angetter does not properly reflect the issues and context of the subject."[417] They raise a number of concerns regarding the lack of attention paid to the children euthanized during the war who "were murdered by purposeful starvation, physical abuse, and poisoning with medication such as Phenobarbital,"[418] and:

> Given the widespread murder of children during Hitler's dictatorship, we are puzzled by the fact that no suspicions were raised by the 7000 bodies of children delivered to the anatomy institute. Angetter's report did not include details of Gross's collection in the Boltzmann institute, which contained the brains of 419 murdered children.[419]

Following Dr. Hubenstorf's comments regarding the lack of context during the years leading up to and following the war, the pair note the additional lack of contextualization of the events in the years 1938-1945. Finally, they state that

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[416] Hubenstorf, "Anatomical Science in Vienna," 1386.

[417] Seidelman and Israel, "Anatomy in Vienna," 343.

[418] Seidelman and Israel, "Anatomy in Vienna," 343.

[419] Seidelman and Israel, "Anatomy in Vienna," 343.

> the inference with respect to possible Jewish victims is misleading. The evidence, rather the lack of it, precludes any conclusions on the question. Regrettably, Angetter's report does not convey the essence of the commission's findings that the University of Vienna and other institutions in Austria exploited terror killings of the Third Reich to acquire specimens for their collections.[420]

The University of Vienna Senate Report states that "there is a basic plan to expand the research focus here and to continue its work on an international level." However, in Dr. Wilfred Druml's official response to the aforementioned criticisms from Dr. Seidelman, Dr. Israel and Dr. Hubenstorf, he argued against this "international" focus. Druml, a member of the University of Vienna Department of Internal Medicine and editor of and contributor to the special 50th anniversary edition of the reappearance of the *Wiener Klinische Wochenschrift,*[421] stated that while "stimulus from abroad certainly may be helpful sometimes...Austrians should continue to make progress without looking too much to the conflicting reactions from outside."[422]

In addition to the issues of focus, context, and the implications of the evidence raised by Seidelman, Israel, and Hubenstorf, it should also be noted that Angetter's report normalizes the information from the Senate Project through the framing of her discussion. Angetter begins the piece with a broadly sketched context of the use of executed prisoners in anatomy in the year 1404, and ends by essentially blaming the medical profession for "a lack of interest" "in the use of bodily remains of humans."[423] The evidence of the certain use of executed political prisoners for anatomical preparations and the Pernkopf anatomy atlas is sandwiched between arguments external to the University of Vienna, and as such, deflects information away from the report's incriminating findings.

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[420] Seidelman and Israel, "Anatomy in Vienna," 343.

[421] Wilfred Druml, "Die Wiener Klinische Wochenschrift von 1938 bis 1945," *Wiener Klinische Wochenschrift* 108, no. 13 (1996): 381-384.

[422] Wilfred Druml, "Medicine in Austria," *The Lancet* 355, no. 6 (2000): 2255.

[423] Angetter, "Anatomical Science at University of Vienna 1938-1945," 1457.

Contrary to Angetter's assertions, however, the delay in the reevaluation of the Pernkopf Text was not the result of "a lack of interest" "in the use of bodily remains of humans."[424] Rather there were numerous factors that led to the delay in the reevaluation of the text. Within the political sphere the delay primarily involved three interrelated issues.

The first of these was the *Anschluss* that incorporated Austria into the German Reich in March of 1938. Although many lined the streets to cheer German troops as they entered Austrian cities, the general public was deeply divided on the subject. The divided opinion on the *Anschluss* made it difficult to unilaterally either condemn or commend Austria's war time activities. It was easier for Austrians to "remember to forget" than remember. The Pernkopf text is particularly difficult to discuss within the Austrian context because it represents both the best and worst of Austrians' participation in the Second World War. Pernkopf, the text's creator, was a Nazi during the illegal period in Austrian history. He "cleansed" the University of Vienna's medical faculty of all Jewish people, and those who would not swear an oath of loyalty to Hitler. He incorporated Nazi symbols into his text and most probably used executed political prisoners to illustrate his text. Some of those used to illustrate his text, however, were known members of the Austrian resistance, a group that has played a major role in Austria's memory of the Second World War. At least half of the 1377 bodies of executed persons delivered to the department were executed for "crimes of resistance and disobedience towards the Nazi regime."[425]

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[424] Angetter, "Anatomical Science at University of Vienna 1938-1945," 1457.

Second, the discussion of the text is further problematized by the "victimization myth." The myth stemmed from the 1943 Moscow Declaration on Austria, which called Austria "first free country to fall victim to Hitlerite aggression."[426] Although intended as part of a larger propaganda campaign to undermine German morale, the Moscow declaration and the resulting "victimization myth," had the effect of exonerating Austria from its accountability for war-time activities, and creating a culture of denial that precluded discussions of war-time culpability. As a Nazi prior to the *Anschluss* Eduard Pernkopf and the swastikas present in the pre-*Anschluss* volumes of his text undermine the Austrian victimization myth and run counter to popular perceptions of the period.

A third factor that led to the delay in the reevaluation of the Pernkopf anatomy text was Austrian anti-Semitism. As this chapter has shown, Austria, Vienna, and the University of Vienna all had a long history of violent anti-Semitism. During the war Pernkopf rid the medical faculty of the highest percentage of faculty members of any German-speaking university. In addition, it is possible that he may have used Jewish concentration camp victims for the creation of some of the images in the Pernkopf text. Following the war, however, there was no one to make Pernkopf accountable for his actions. Only 19 of the nearly 200 faculty members who remained at the University of Vienna after the war were thought not to have been "burdened" by a Nazi past.[427] The depth and breadth of involvement in the Nazi regime by the "burdened" faculty members varied considerably, but it seems few wished to re-visit their war-time pasts. In addition, many of the dismissed faculty perished in concentration camps during the war. Only a fraction of the Jewish community remained in Vienna, and very few Jewish faculty members returned to the university. At no point did the University of Vienna encourage faculty to return to their posts. As a result there was little institutional memory of the crimes of the war and those who did speak out were often censured.

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[425] Spann, *Results of the Senate Project of the University of Vienna*, 8.

[426] "The Moscow Declaration on Austria, 30 October 1943," in Keyserlingk, *Austria in World War II*, 207.

[427] Ernst, "A Leading Medical School Seriously Damaged," 791.

The combination of the *Anschluss* and the "victimization myth," in conjunction with anti-Semitism, contributed to the delay in the reevaluation of the Pernkopf text. These factors also affected the Senate Project of the University of Vienna. The project operated within the parameters of the "victimization myth" by beginning with the Anschluss and ending with the war. The University of Vienna contends that "the results presented have enabled the main questions of the project to be resolved, so that the foundations have been laid for a final and honorable purging of the ethically and morally unacceptable conditions within the Medical faculty of the University of Vienna;"[428] however, the conclusions offered in the report perpetuate the evasive patterns of earlier Nazi medical research. Although the university did cease the use and retention of specimens that may have been obtained from victims of Nazi justice,[429] they did not achieve their stated objectives of clarifying as fully and thoroughly as possible the suspicions pertaining to the use of the victims of the Nazi regime by the university, or publishing without reservation all compromising facts.[430] Leaving many questions unanswered and even more unasked, the Senate Project was ultimately inconclusive, and research should continue on Eduard Pernkopf and his anatomical Atlas.

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[428] Spann, *Results of the Senate Project of the University of Vienna*, 12.

[429] Spann, *Results of the Senate Project of the University of Vienna*, 5.

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[430] Spann, *Results of the Senate Project of the University of Vienna*, 5.

IV. REMEMBERING PERNKOPF: CONCLUSIONS

Following the publication of the complete Senate Report in 1998 the University of Vienna removed all suspect anatomical specimens from its collections and subsequently gave them an "honorable burial" in a nearby cemetery.[431] Today more than seventy years have passed since Dr. Eduard Pernkopf began work on his anatomy atlas. The debates surrounding the text spawned numerous articles and letters and led to an investigation into the text, its creator, and the bodies used to illustrate it. The investigations substantiated the suspicion that Pernkopf was a Nazi who, in a matter of months, purged the University of Vienna of the majority of its medical faculty. It was also confirmed that the Nazi symbols contained in the atlas reflected both Pernkopf and his illustrators' beliefs in the Nazi party. Finally, the investigation exposed the problematic origins of many of the anatomical specimens, and those that remained in the university's collection were removed.

The fall of 2008 will mark the 10th anniversary of the publication of the Senate Report, but aside from the removal of the aforementioned anatomical specimens, few of the solutions proposed by the University of Vienna have been put into effect. The Pernkopf anatomy text, in its many editions, remains in the circulating collections of hundreds of university libraries. The atlas continues to be consulted and cited by doctors, surgeons, and medical students, many ignorant of its origins and the debates surrounding it.

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[431] Julia Ferguson, "Vienna University Buries Body Parts of Nazi Victims – Bones Tissue Used by Medical Students in Anatomy Studies," *National Post*, 23 March 2002, A13.

The Senate Investigation served as an endpoint rather than a starting point for future discussions. The interment of the anatomical specimens literally buried the past, discouraging the possibility of future discussions on the issue. Although the authors of the senate report stated that the foundations had been "laid for a final and honorable purging of the ethically and morally unacceptable conditions within the University of Vienna," at the university, Eduard Pernkopf's legacy remains untarnished. His name is inscribed in gilded marble on the Alma Mater Rudolfinia distinguished alumnae wall in the main entrance.[432] The editions of the *Topographische Anatomie des Menschen* held in the University of Vienna library collections do not contain any note or indication of either the background of the text or its Nazi creator. In addition, the Vienna Institute of the History of Medicine at the Josephinum, which describes itself as "a place of study which offers students a graphic picture of modern medical knowledge,"[433] does have an interesting display on Sigmund Freud, but does not mention Pernkopf, his text, or any events that transpired at the university between 1938 and 1945. If one of the goals of the Senate Investigation was to elucidate the conditions under which the text was created, it failed to produce any concrete public acknowledgement of his pivotal role in either the expulsion of the medical faculty or his use of executed prisoners.

Although more than ten years have elapsed since the Pernkopf controversy erupted, the discussion surrounding the text has not abated and articles continue to be published on the atlas and its "tainted" past.[434] Recently some have argued that the Pernkopf controversy has facilitated the ethical analysis of anatomical sciences in Germany and Austria.[435] This process, however, is becoming increasingly difficult. Currently many parties invested in the Pernkopf case have been preventing, rather than facilitating, the continued discussion of the text and the ethical issues associated with it.

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[432] See Figure 6.

[433] "The Vienna Institute of the History of Medicine at the Josephinium." (Single sided typed handout from the Museum).

In response to the controversy surrounding the text the holder of the rights to the Pernkopf illustrations, Urban and Fischer Verlag, have stopped printing the atlas. The publishers have also recently refused to allow the reproduction of any of the Pernkopf plates in academic articles citing not ethical or moral justifications, but "the negative publicity that the Pernkopf issue has generated in the past."[436] Additionally, the Universities of Graz and Innsbruck, known to have had many of the Pernkopf preparations, continue to decline to conduct their own inquiries into their relationship to the Pernkopf text and their respective National Socialist pasts. These actions suggest a desire to suppress the past rather than address it.

In some ways, given the complicated and often sensational nature of the debates surrounding the text, it is difficult to blame those who do not wish to become involved in the discussion. A comprehensive examination of the Pernkopf atlas is unsettling. It undermines many of our taken for granted assumptions about the history of anatomy, legal history, and Austrian political history. It also challenges our contemporary view of the Nazi period and forces us to see Nazi medicine as an integrated part of medical history rather than an anomaly.

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[434] The most recent include D. Gareth Jones, "Anatomical Investigations and their Ethical Dilemmas," *Clinical Anatomy* 20 (2007): 338-343, and Sabine Hildebrandt, "How the Pernkopf Controversy Facilitated a Historical and Ethical Analysis of the Anatomical Sciences in Austria and Germany: A Reccomendation for the Continued Use of the Pernkopf Atlas," *Clinical Anatomy* 19 (2006): 91-100.

[435] Hildebrandt, "How the Pernkopf Controversy Facilitated a Historical and Ethical Analysis of the Anatomical Sciences in Austria and Germany," 91-100.

[436] Chris Hubbard, "Eduard Pernkopf's Atlas of Topographical and Applied Human Anatomy: The Continuing Ethical Controversy," *The Anatomical Record* 265, no. 5 (2001): 211.

As worthwhile as examinations of the Pernkopf text can be, they are also in many ways unsatisfying. Researching Pernkopf does not provide either easy answers, or concrete solutions with what to do with the text. Perhaps it is a result of our desire to label and categorize that that there has been a tendency to view the text predominately in terms of its relationship with the holocaust. By viewing the text through this lens, however, the complex issues associated with the atlas are simplified. The text is thus reduced to another incidence of a type, an example of "bad" Nazi medicine.

Another risk of viewing the text primarily from the perspective of holocaust studies is that it ignores how this text fits within the broader context of the history of medicine and medical ethics. The issues relating to Pernkopf's use of executed prisoners continue to plague medical practice. Largely as a result of the difficulty obtaining cadavers, the practice of dissection is disappearing in medical schools. For example, at the Peninsula Medical School of the Universities of Exeter and Plymouth, one of the fastest growing medical schools in the United Kingdom, dissection has been completely replaced by "living anatomy," medical imaging, and virtual multi-media methods and models.[437] This development reflects ongoing debates about the way human cadavers are used in medical teaching.

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[437] "Life Sciences Research Centre," http://www.pms.ac.uk/pms/undergraduate/week.php

While teaching practices are being adjusted, contemporary research practices are also being questioned. One example involves the United States National Institutes of Health's Visible Human Project[438] which seeks to create "complete, anatomically detailed, three-dimensional representations of the normal male and female human bodies."[439] The long-term goal of the project is "to produce a system of knowledge structures that will transparently link visual knowledge forms to symbolic knowledge formats such as the names of body parts." The two human specimens used for this project bequeathed their bodies to medical science; the female body was that of an anonymous housewife, the male was an executed death row prisoner. Although consent was obtained in both cases, the male was counseled by the prison chaplain to donate his body. This situation raised further questions about the legitimacy of informed consent in prison populations. High resolution images of the dissections are now available through the National Institute of Health's webpage. According to the National Library of Medicine the images have been cited nearly 1000 times between the project's inception in 1987 and May of 2007.[440] Given that the first images were scanned in 1995 it would have been impossible for either donor to know that their bodily images would be readily available to the general public.

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[438] "The Visible Human Project: Overview," http://www.nlm.nih.gov/research/visible/visible_human.html.

[439] "The Visible Human Project: Overview," http://www.nlm.nih.gov/research/visible/visible_human.html.

[440] "Current Bibliographies in Medicine 2007-1: Visible Human Project" http://www.nlm.nih.gov/pubs/cbm/visible_human_2007.html

The Visible Human Project met with widespread acclaim, but also substantial controversy for its use of the executed death row prisoner, and liberal use of informed consent. Comments on the issue echoed those relating to Pernkopf in both their emotionally charged and polemical reactions. One stating in the *Lancet* that

> We were upset to find Internet presenting anatomic slides and corresponding pictures of medical imaging of an executed murderer who donated his body to the US government for science and teaching. The belief that anyone in medicine might benefit from the knowledge gained from these pictures is absurd. The death penalty itself and all medical participation before during and after an execution is unethical under all conditions…In our opinion the immediate withdrawal of these pictures from the National Institutes of Health is morally necessary.[441]

Interestingly these comments came from medical professors at the University of Vienna. The statement highlights some of the enduring issues within anatomy; both in terms of the way that bodies are obtained and used. As these professors imply, it is impossible to attain free and informed consent from someone who is institutionalized. Moreover, the dissemination of unethically obtained anatomical images on the internet undermines the spirit of informed consent. In this recent example it seems that roles have reversed; it was primarily Americans who drew attention to the ethical considerations surrounding the Pernkopf atlas, and now it is the Austrians who have exposed the ethical concerns with the Visible Human Project.

The Visible Human Project demonstrates that the ethical issues associated with the Pernkopf text are not unique within the history of medicine. It is therefore counterproductive to view the atlas as a hermetically sealed episode within medical history. These ethical issues continue to emerge in modern medicine, justifying a reevaluation of the Pernkopf text that resists the temptation to simply dismiss its related ethical issues as something that is either a product of Nazi medicine or something that the Senate Investigation has laid to rest.

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[441] G. Roeggia, U. Landesmann, and M. Roeggia, "Ethics of Executed Person on the Internet," *The Lancet* 345 (1995): 260.

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Table 1: Nazi Symbols in Volume I - First Half[442]

I. Band: Allgemeines, Brust und Brustgleidmaβe, Erste Hälfte

Mit 216 Abbildung im Text und auf 127 farbigen Tafeln

ABBILDUNGEN IM TEXT	FARBIGEN TAFELN
	1. Tafel 20 (Leiper - Swastika)
	2. Tafel 40 (Leiper - Swastika)
	3. Tafel 43 (Leiper - Swastika)
	4. Tafel 47 (Leiper - Swastika)
	5. Tafel 48 (Leiper - Swastika)
	6. Tafel 50 (Leiper - Swastika)

Table 2: Nazi Symbols in Volume I - Second Half[443]

I. Band: Allgemeines, Brust und Brustgleidmaβe, Zweite Hälfte

Mit 216 Abbildung im Text und auf 127 farbigen Tafeln

ABBILDUNGEN IM TEXT	FARBIGEN TAFELN
1. Abbildung 80 (Leiper - Swastika)	
2. Abbildung 86 a (Leiper - Swastika)	
3. Abbildung 86 b (Leiper - Swastika)	

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[442] Eduard Pernkopf, *Topographische Anatomie des Menschen Lehrbuch und Atlas der regionär-stratigraphischen Präperation: I. Band: Allgemeines, Brust und Brustgleidmaβe, Erste Hälfte*. Wien: Urban & Schwarzenberg, 1937.

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Table 3: Nazi Symbols contained in Volume II- First Half[444]

II. Band: Bauch, Becken und Beckengleidmaße, Erste Hälfte

Mit 252 Abbildung im Text und auf 144 farbigen Tafeln

ABBILDUNGEN IM TEXT	FARBIGEN TAFELN
1. Abb. 3 s.12 (E.L.) Swastika	1. Tafel 2 s.58-59 (E.L.) Swastika
2. Abb. 5 s.38 (E.L.) Swaztika	2. Tafel 3 s.60-61 (E.L.) Swastika
3. Abb. 6 s.39 (E.L.) Swaztika	3. Tafel 14 s.76-77 (E.L.) Swastika
4. Abb. 7 s.44 (E.L.) Swaztika	4. Tafel 15 s.78-79 (E.L.) Swastika
5. Abb. 8 s.45 (E.L.) Swaztika	5. Tafel 16 s.78-79 (E.L.) Swastika
6. Abb. 51 s.127 (E.L.) Swaztika	6. Tafel 17 s.80-81 (E.L.) Swastika
7. Abb. 52 s.128 (E.L.) Swaztika	7. Tafel 18 s.80-81 (E.L.) Swastika
8. Abb. 59 s.147 (E.L.) Swaztika	8. Tafel 31 s.94-95 (K. Endtresser) SS
9. Abb. 107 s. 349 (E.L.) Swaztika	9. Tafel 32 s.98-99(E.L.) Swastika
10. Abb. 108. s.351(E.L.) Swaztika	10. Tafel 65 s.306-307(E.L.) Swastika

Table 4: Nazi Symbols contained in Volume II- Second Half[445]

II. Band: Bauch, Becken und Beckengleidmaße, Zweite Hälfte

Mit 252 Abbildung im Text und auf 144 farbigen Tafeln

ABBILDUNGEN IM TEXT	FARBIGEN TAFELN
11. Abb168 s.586 (E.L.) Swastika*	11. Tafel 94 s.604-605(E.L.) Swastika
	12. Tafel 102 s.672-673(K. Endtresser) SS
	13. Tafel 103 s.672-673(K. Endtresser) SS

*168-172 Dissection of pregnant mother

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[444] Eduard Pernkopf, *Topographische Anatomie des Menschen Lehrbuch und Atlas der regionär-stratigraphischen Präperation: II. Band: Bauch, Becken und Beckengleidmaße, Erste Hälfte.* Wien: Urban & Schwarzenberg, 1941.

[445] Eduard Pernkopf, *Topographische Anatomie des Menschen Lehrbuch und Atlas der regionär-stratigraphischen Präperation: II. Band: Bauch, Becken und Beckengleidmaße, Zweite Hälfte.* Wien: Urban & Schwarzenberg, 1941.

Table 5: Nazi Symbols contained in Volume III[446]

III. Band: Der Hals

Mit 211 Abbildung im Text davon 160 auf 114 farbigen Tafeln

ABBILDUNGEN IM TEXT	FARBIGEN TAFELN
	1. Tafel 9 (Franz Batke) SS/44 s.48-49
	2. Tafel 10 (Franz Batke) SS/44 s.48-49
	3. Tafel 13 (Franz Batke) SS/44 s.50-51
	4. Tafel 14 (Franz Batke) SS/44 s.52-53

Table 6: Nazi Symbols Contained in English Volume I: (1963)[447]

Volume I: Head and Neck

332 Illustrations

	Figure #	Symbol Type	Artist	Page #
1.	258	SS/44	F. Batke	p. 244
2.	259	SS/44	F. Batke	p. 245
3.	265	SS/44	F. Batke	p. 254-255
4.	268	SS/44	F. Batke	p. 258-259

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[446] Pernkopf, Eduard. *Topographische Anatomie des Menschen: Lehrbuch und Atlas der regionar-stratigraphischen Praparation. III. Band: Der Hals.* Wien: Urban & Schwarzenberg, 1952.

[447] Eduard Pernkopf, *Atlas of Topographical and Applied Human Anatomy: Volume I: Head and Neck.* Ed. Helmut Ferner, trans. Harry Monsen. Philadelphia: W.B. Saunders Company, 1963.

Table 7: Nazi Symbols Contained in English Volume II (1964) [448]

Volume II: Thorax, Abdomen, Extremities

378 Illustrations

	Figure #	**Symbol Type**	**Artist**	**Page #**
1.	40	Swastika	E. Leiper	49
2.	102	Swastika	E. Leiper	111
3.	103	Swastika	E. Leiper	112
4.	104	Swastika	E. Leiper	113
5.	114	Swastika	E. Leiper	122
6.	118	Swastika	E. Leiper	127
7.	160	Swastika	E. Leiper	163
8.	174	Swastika	E. Leiper	170
9.	175	Swastika	E. Leiper	180-181
10.	177	Swastika	E. Leiper	184-185
11.	183	SS	Karl Entdresser	193
12.	184	Swastika	E. Leiper	194
13.	189	Swastika	E. Leiper	200
14.	190	Swastika	E. Leiper	201
15.	191	Swastika	E. Leiper	201
16.	192	Swastika	E. Leiper	203
17.	193	Swastika	E. Leiper	204-205
18.	250	Swastika	E. Leiper	266
19.	251	Swastika	E. Leiper	267
20.	259	Swastika	E. Leiper	276-277
21.	290	Swastika	E. Leiper	312
22.	294	Swastika	E. Leiper	316
23.	295	Swastika	E. Leiper	317
24.	324	SS	Karl Entdresser	352
25.	325	SS	Karl Entdresser	353

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[448] Pernkopf, Eduard. *Atlas of Topographical and Applied Human Anatomy: Volume II: Thorax, Abdomen and Extremities*. Ed. Helmut Ferner, trans. Harry Monsen. Philadelphia: W.B. Saunders Company, 1964.

Table 8: Nazi Symbols Contained in English Volume I (1980)[449]

Volume I: Head and Neck

231 Colour and 108 Black and White Illustrations

	Figure #	Symbol Type	Artist	Page #
1.	268	SS/44	F. Batke	p. 233
2.	269	SS/44	F. Batke	p. 234

Table 9: Nazi Symbols Contained in English Volume II (1980)[450]

Volume II: Thorax, Abdomen, Extremities

322 Colour and 89 Black and White Illustrations

	Figure #	Symbol Type	Artist	Page #
1.	347	SS	Karl Entdresser	p. 357
2.	348	SS	Karl Entdresser	p. 358

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[449] Pernkopf, Eduard. *Atlas of Topographical and Applied Human Anatomy: Volume I: Head and Neck.* 2nd Revised Edition. Baltimore: Urban & Schwarzenberg, 1980.

[450] Pernkopf, Eduard. *Atlas of Topographical and Applied Human Anatomy: Volume II: Thorax, Abdomen and Extremities.* 2nd Revised Edition. Baltimore: Urban & Schwarzenberg, 1980.

Figure 1

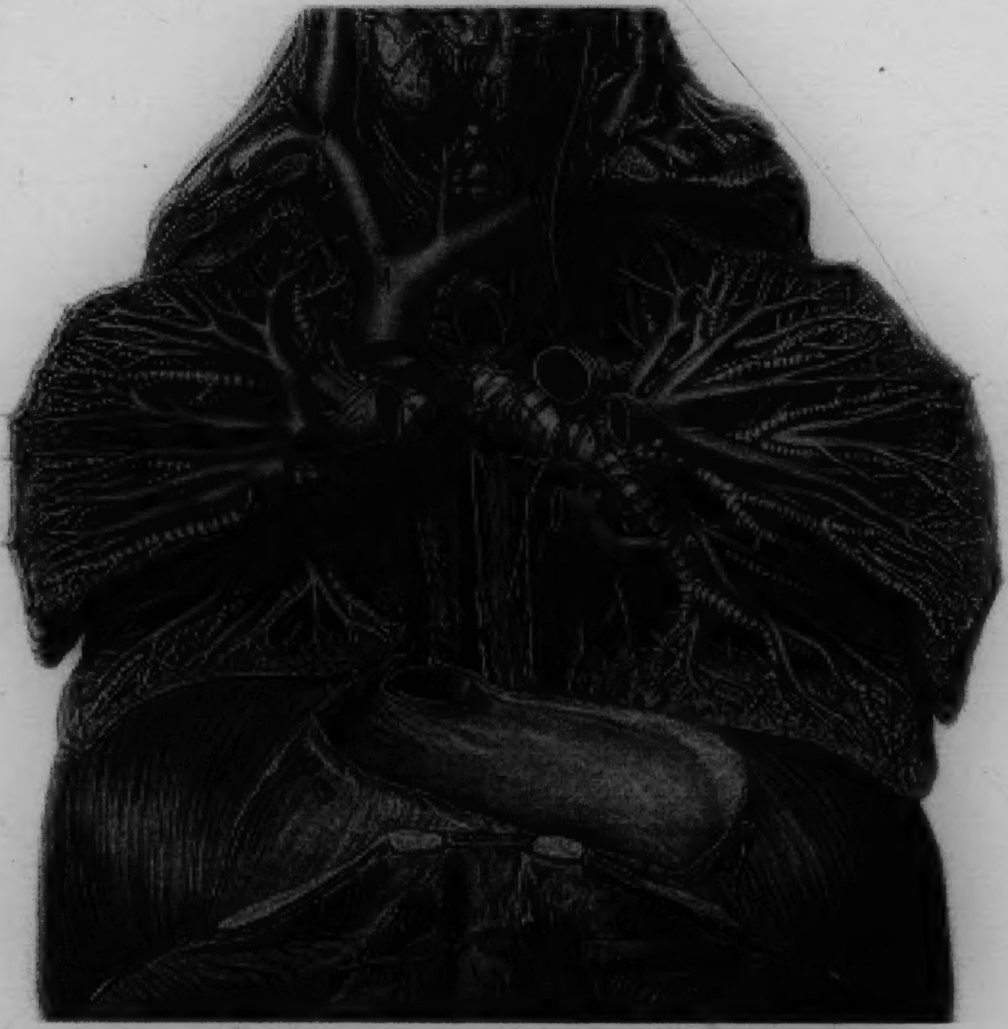

Illustration by F. Batke for Eduard Pernkopf, Atlas of Topographical and Applied Human Anatomy: Volume II: Thorax, Abdomen and Extremities. (Philadelphia: W.B. Saunders Company, 1964), Fig. 116, p.p.124-125.

Figure 2

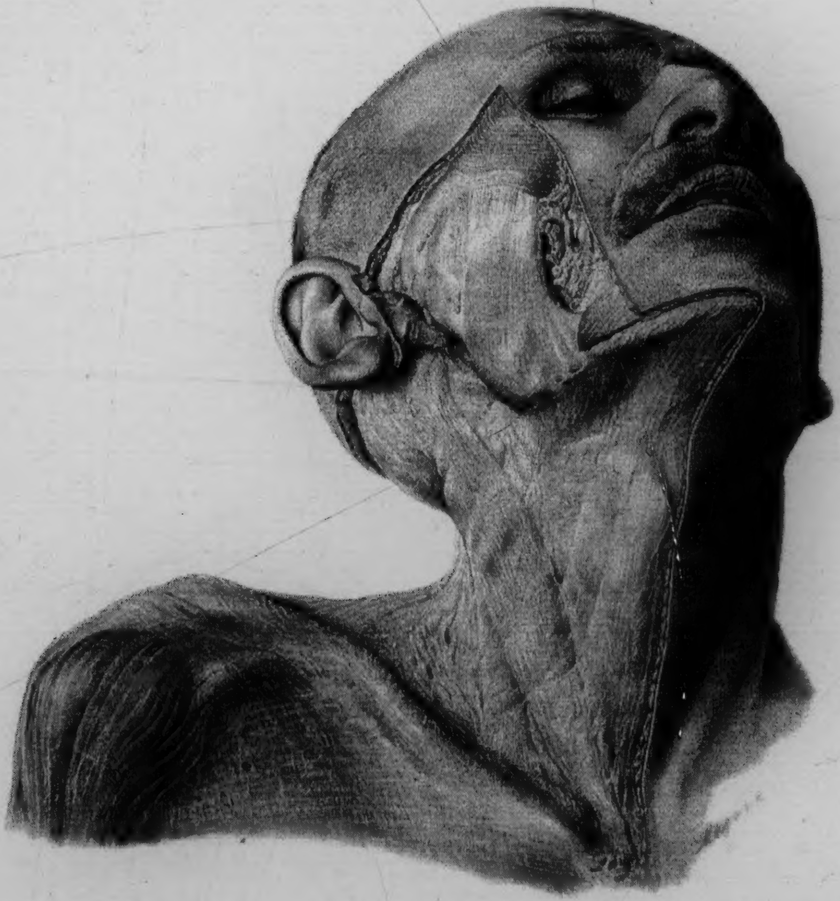

Illustration by E. Lepier for Eduard Pernkopf, *Atlas of Topographical and Applied Human Anatomy: Volume I Head and Neck.* 2nd Revised Edition. (Baltimore: Urban & Schwarzenberg, 1980), Fig. 261 p.226.

Illustration by E. Lepier for Eduard Pernkopf, *Atlas of Topographical and Applied Human Anatomy: Volume I Head and Neck.* (Philidelphia: W.B. Saunders Company,1963), Fig. 251 p.234.

Figure 3

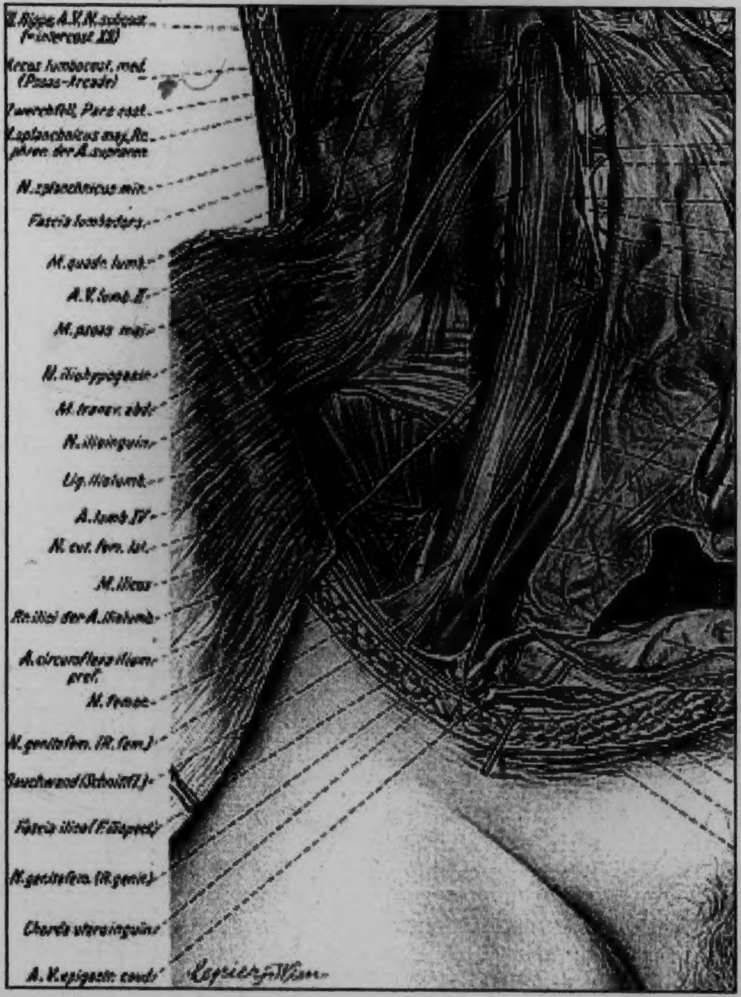
XII. Rippe A.V.N. subcost. (= intercost. XII)
Arcus lumbocost. med. (Psoas-Arcade)
Zwerchfell, Pars cost.
N. splanchnicus maj., Rr. phren. der A. suprarenal.
N. splanchnicus min.
Fascia lumbodors.
M. quadr. lumb.
A.V. lumb. II
M. psoas maj.
N. iliohypogastr.
M. transv. abd.
N. ilioinguin.
Lig. iliolumb.
A. lumb. IV
N. cut. fem. lat.
M. iliacus
Rr. iliaci der A. iliolumb.
A. circumflexa ilium prof.
N. femor.
N. genitofem. (R. fem.)
Bauchwand (Schnittfl.)
Fascia iliaca (F. iliopect.)
N. genitofem. (R. genit.)
Chorda utero-inguinal.
A. V. epigastr. caud.
Lepier-Wien

Illustration by E. Lepier for Eduard Pernkopf, *Atlas of Topographical and Applied Human Anatomy: Volume II: Thorax, Abdomen and Extremities.* (Philadelphia: W.B. Saunders Company, 1964), Fig. 184, p.194.

Figure 4

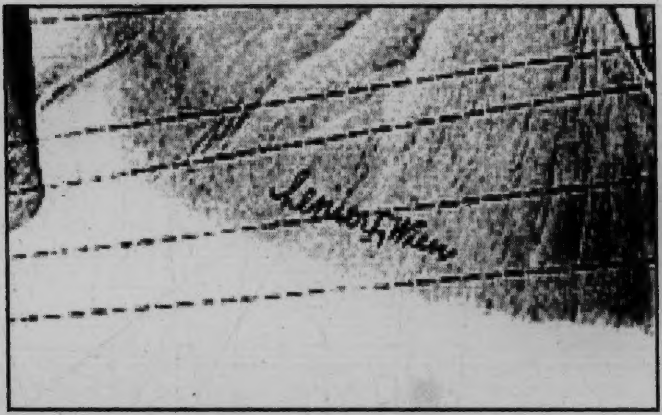

Illustration by E. Lepier for Eduard Pernkopf, *Atlas of Topographical and Applied Human Anatomy: Volume II: Thorax, Abdomen and Extremities.* (Philadelphia: W.B. Saunders Company, 1964), Fig.192, p.203.

Figure 5

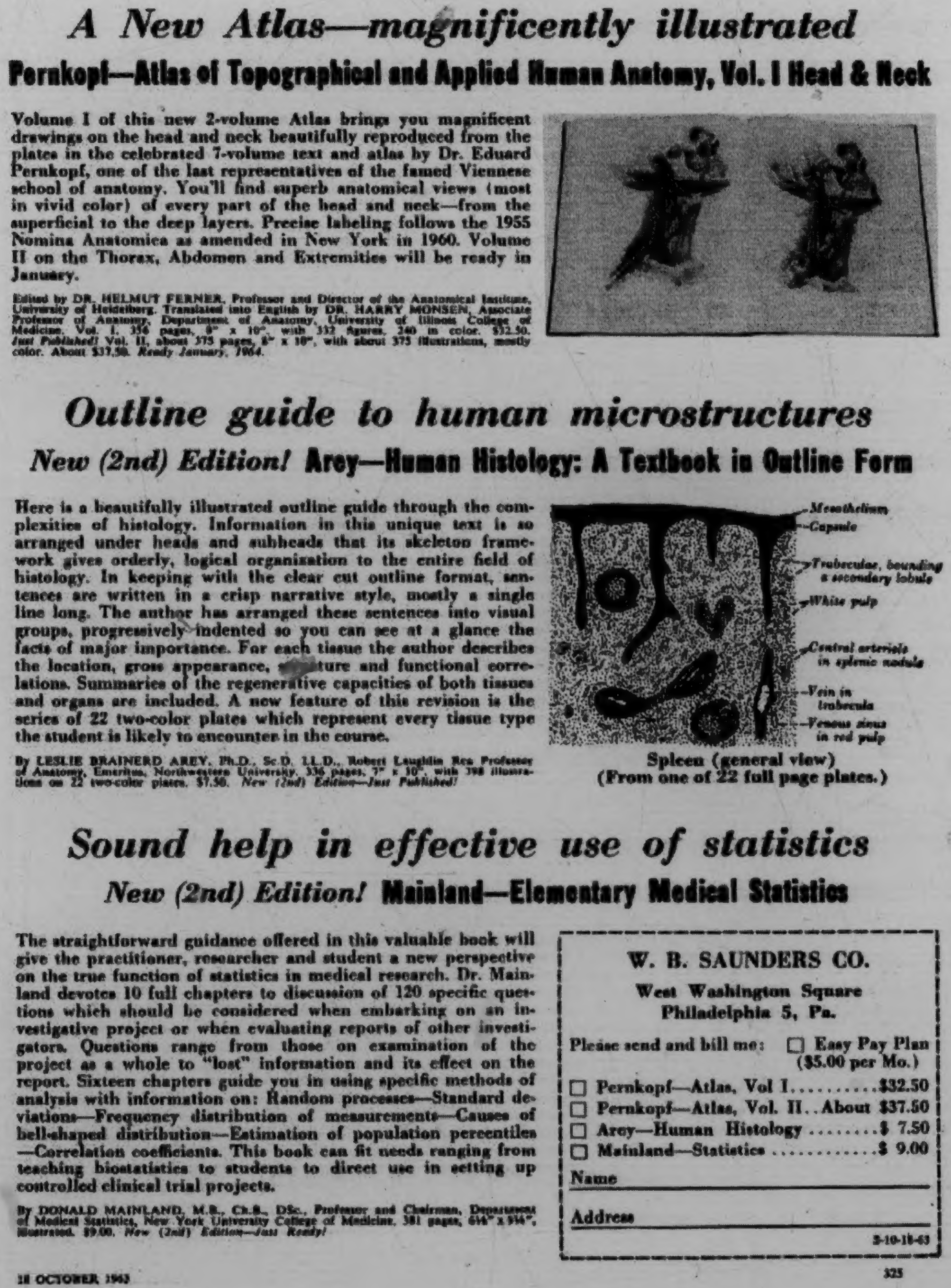

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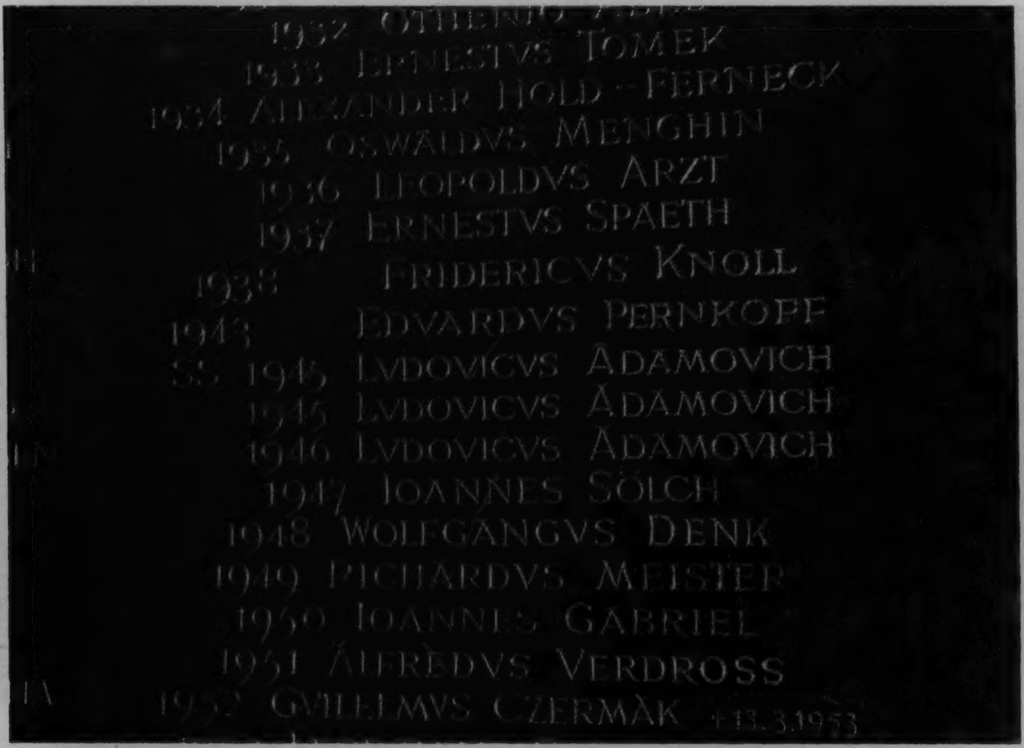
Figure 6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Photograph D. Berry. Eduard Pernkopf's name on the Alumni Wall in the main foyer at the University of Vienna.